NEO Hand-Held Computer
(Model No. PX750)

February 23, 2009   **Part No. 8100157.A**

ISO 9001 Certified
Quality Management System

PSION TEKLOGIX

This user manual supports Model Numbers:

- PX750BT

- PX750BT8

- FCC ID: GM3PX750BT and GM3PX750BT8

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INTRODUCTION

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1.1   About This Manual

This manual describes how to configure, operate and maintain NEO, a light-weight, versatile hand-held computer.

Chapter 1: Introduction

provides a basic overview of NEO.

Chapter 2: Basic Checkout

describes the steps required to get NEO ready for operation, including setting up the 802.11b/g radio.

Chapter 3: Getting To Know NEO

describes NEO features and outlines how to charge and maintain the battery. This chapter also provides a description of the keyboards, how to navigate in Microsoft Windows CE 5.0, and so on.

Chapter 4: Working With Windows CE 5.0

describes the Microsoft Windows CE 5.0 desktop and how to use it. This chapter also outlines the basics of moving around a Windows CE 5.0 window, selecting and opening icons, files, folders and working with a Windows dialog box.

Chapter 5: Configuration

describes the Windows CE 5.0 Control Panel and how to use it to configure NEO.

Chapter 6: Peripheral Devices & Accessories

describes the peripherals and accessories available for your NEO.

Chapter 7: Specifications

lists hand-held, radio, scanner and battery specifications.

Appendix A: Pinouts

describes NEO pinouts.

Appendix B: Wireless Zero Config

outlines the steps used to configure your radio using Windows Zero Config.

1.2   Text Conventions

Note: Notes highlight additional helpful information.

> ⚠ ***Important: These statements provide particularly important instructions or additional information that is critical to the operation of the equipment.***

> ⚠ ***Warning: These statements provide critical information that may prevent physical injury, equipment damage or data loss.***

1.3 NEO Hand-Held Computer Features

> ⚠ ***Important: For all safety, regulatory and warranty information, refer to the "NEO Hand-Held Computer Regulatory & Warranty Guide", PN 8000175.***

NEO is a compact, ruggedized hand-held computer running the Microsoft Windows CE 5.0 operating system. It is intended for use in commercial and light industrial applications. NEO can be ordered with or without a radio. Without a Wi-Fi radio, it operates as a batch or *unconnected* computer. With a Wi-Fi radio installed, NEO operates as a *connected* computer, delivering real time wireless data transactions. A number of 1D bar code input methodologies are supported by the scanner and imager available with this hand-held computer. Optimization for specific operational environments is supported with a wide range of peripheral options and carrying accessories.

The unique tilted screen design on this hand-held computer makes the display content readily visible. This means that the operator can scan a bar code and view the results on the display in one movement – no need to manually tilt the unit to view the results after each scan. In addition, the tilted screen in conjunction with the protective rib at the base of the keyboard allows the unit to be placed facedown safely with no danger of an accidental key press.

> 📖 *Note: For complete NEO hand-held computer specifications, refer to "Specifications" on page 199.*

Figure 1.1   NEO Hand-Held Computer - Numeric & Alpha-Numeric

Model Variants

Connected NEO Standard Features:

- 2.7 inch Colour Touchscreen
- Windows® CE 5.0 Professional
- 128 MB Flash/128 MB RAM
- microSD slot
- 3000 mAh Battery
- Discrete VoIP (Push-To-Talk)
- WiFi and *Bluetooth* Radios

Additional Connected Options:

- 1D Imager
- 1D Laser Scanner
- Keyboard Variants: 48-Key Alpha-Numeric or 26-Key Numeric

Batch NEO Standard Features:

- 2.7 inch Colour Touchscreen
- Numeric Keyboard
- Windows® CE 5.0 Core
- 128/128 MB Memory
- microSD Slot
- 3000 mAh Battery

Additional Batch Options:

- *Bluetooth* Radio
- *Bluetooth* Radio and 1D Imager
- *Bluetooth* Radio and 1D Laser Scanner

Platform

- **Processor:** PXA270 Processor @ 312 Mhz
- **Memory:**
    - On-board RAM: 128 MB SDRAM
    - On-board ROM: 128 MB Flash

Operating System

- Microsoft® Windows® CE 5.0

Programming Environment

- HTML, XML
- Mobile Devices SDK
    - HTML, XML
    - CE.NET SDK:
    - Java™
    - Visual Studio® 2008
    - Standard protocol APIs – Windows® sockets (WinCE)

Wireless Communications

- On-board IEEE 802.11b/g (CCX Certified)
- On-board *Bluetooth* radio (10 metre range)

Application Software

- Internet Explorer® 6 for CE
- Wordpad
- ActiveSync
- Open TekTerm
- ANSI
- TESS terminal emulations
- IBM 3270, IBM 5250, HP 2392
- Wavelink®
- MCL
- MCC
- PTX Connect

Bar Code Applications

- 1D Standard Laser Scanner Option – SE955
- 1D Standard Imager Option – EV15

Internal Expansion Slots

- One microSD slot

Expansion Port

- Battery Output Power
- USB Signalling
- Scanner Trigger Input

Docking Port

- RS232
- USB
- DC Input

Power Management

- 3.7 V @ 3000 mAh Lithium-ion rechargeable battery
- 8 hour battery operation
- Smart battery system
- Built-in gas gauge and performance monitor
- System backup (up to 10 minutes) during battery swap
- 3 day real time clock backup
- Adjustable battery allocation between system backup and runtime

Accessories

- Desktop charger
- Quad charger
- Pistol grip
- Holster
- Hand Strap
- Shoulder Strap
- Additional miscellaneous adaptors and cables (a complete list of accessories is available at *www.psionteklogix.com*

BASIC CHECKOUT 2

2.1   Preparing NEO For Operation

2.1.1   The Battery

NEO is powered with a 3000 mAh Lithium-ion Battery, Model No. WA3020, and is compatible with battery Model No. WA3006.

> *Warning: Before charging the battery, it is critical that you review the safety guidelines in the 'NEO Hand-Held Computer (Model No. PX750) Regulatory & Warranty Guide', PN 8000175.*

2.1.1.1   Charging The Main Battery

Battery packs shipped from the factory are charged to approximately 40% and must be fully charged prior to use. Batteries can be charged using a variety of docking stations along with a NEO internal charger. When using the internal charger, a suitable power source is required. All docking stations are described in Chapter 6: "Peripheral Devices & Accessories" beginning on page 187.

> *Note: In order to maintain the NEO real time clock for three days, a battery must be charged for at least two hours while installed in the hand-held; however, if you are charging a **spare** battery (not installed in the hand-held), the real time clock three day backup cannot be maintained until a charged battery is installed in the hand-held computer for at least two hours.*

2.1.2   Backup Battery Power

A super capacitor provides a minimum of 10 minutes of *suspend mode* backup power to NEO to protect data while you swap in a new battery; all unnecessary draws on power such as the display and CPU are shut down to preserve power.

> *Important: When you initially power up the hand-held, leave the battery in the unit for a minimum of 2 minutes to allow the super capacitor to reach full capacity.*

2.2   Switching NEO On And Off

2.2.1   Installing The Battery And Switching The Unit On

- Push the release latch at the base of the battery cover to unlatch it. Remove the battery cover.

- Insert a *charged* battery into the unit, making certain that the connectors on the battery are aligned with those in the NEO battery compartment.

- Replace the battery cover, and snap it into place.

Note: If you are using a docking station or an external power supply, you can insert an uncharged battery and switch NEO on.

To switch NEO on:

- Press and hold down the [ENTER] key for at least one second.

- When the LED flashes green, release the [ENTER] button.

The desktop screen is displayed.

Note: If the unit was already in use—the unit may be off (suspend state) – pressing [ENTER] 'wakes' the unit from this state. The screen in which you were working prior to the suspend state is displayed.

2.2.2 Switching The Unit Off (Suspend)

- Press the [FN/BLUE] key, and then press [ENTER].

2.3 Calibrating The Touchscreen

Note: Keep in mind that the touchscreen function can be turned off (see "Touch" on page 97).

The touchscreen is factory-calibrated and ready-to-go; however, over time the touchscreen operating parameters may change, and may need to be recalibrated for correct operation. Refer to "Calibrating The Touchscreen" on page 35 for details.

2.4 Wireless Networking

NEO contains an integrated 802.11b/g radio module. The *Wi-Fi Config* application is used to configure NEO for one or more wireless network profiles. A network profile contains settings for SSID (Service Set Identifier) and security options.

Note: In most situations, the configuration of your 802.11 radio will require parameter setting and access keys from a network administrator.

To launch the *Wi-Fi Config* application:

- Tap on **Start>Programs>Wi-Fi Config**.
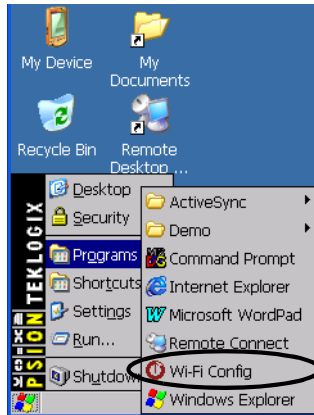
The *Wi-Fi Config* screen is displayed.

2.4.1 Status Tab

The *Status* tab displays information about the wireless network to which NEO is configured to connect. When there are no network profiles configured, this tab is not populated.
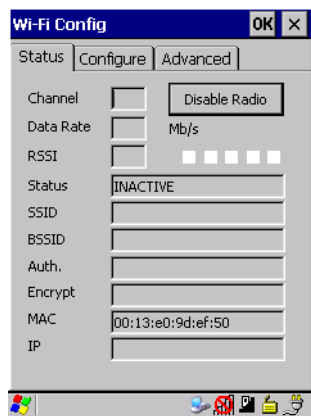
Disable/Enable Radio: This button toggles between *Disable Radio* and *Enable Radio* depending on whether the radio is turned off or on.

2.4.2   Wi-Fi Config Tab

- To configure the radio for a wireless network, tap on the **Configure** tab.
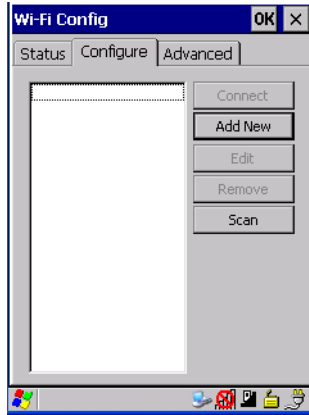
Connect: Used to connect to an already existing wireless network configuration.

Add New: Used to create a new wireless network configuration.

Edit: Used to change values in an already existing wireless network configuration.

Remove: Used to delete a wireless network configuration.

Scan: Used to detect and list available wireless networks. You can highlight a network in the list, and tap on *Add New* to activate the network.

There are two methods available when configuring a radio network – you can either scan for an existing network or manually create a network. If you tap on the **Scan** button, a list of networks detected by the radio are displayed. Highlighting one of the listed networks and tapping on the *Add New* button creates a new profile that is completed based on the security capabilities detected by the radio. You may need to add additional information, depending on your network requirements.

If you tap on the **Add New** button rather than the *Scan* button, you can create a network manually.

⚠️ *Important: The steps below describe how to manually create a network. Keep in mind that this is intended only as an <u>example</u> and may vary from your own network requirements. If, for example, you are using a different type of security for your network, the fields you complete may not match those described here.*

• Enter the **SSID** (Service Set Identifier) for your network.

2.4.2.1 Authentication Modes

NEO supports four classes of authentication – *Open*, *WEP*, *WPA PSK* and *802.1x with EAP*. Tapping on the *Auth. Mode* menu displays your authentication options.
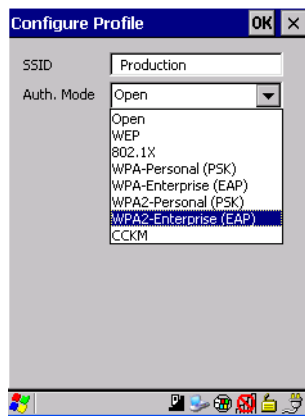
*Note: Each Auth. Mode has a unique **Configure Profile** screen attached to it with fields appropriate to the authorization mode you've chosen.*

Open Authentication

Open authentication does not provide security. When this option is chosen, NEO will connect to wireless networks which do not use authentication or encryption.

WEP (Wired Equivalent Privacy)

WEP provides static security to prevent others from accidentally accessing your network. If you choose this option, you can specify the type of WEP authentication – *Open* or *Shared*, the WEP security key length – *64 bit* or *128 bit* and the key type – *ASCII* or *Hex*. WEP *Key* fields are also provided where you can specify a 5 or 13 ASCII character sequence or an equivalent 10 or 26 Hexadecimal digit sequence that matches the active WEP key on the access point.

WPA & WPA2 Personal PSK (Pre-Shared Key)

When PSK is selected, either *WPA Personal PSK* or *WPA2 Personal PSK* – a shared key must be configured on both the access point and the hand-held computer. One of the following can be chosen from the *Encryption* dropdown menu: *TKIP*, *AES* or *TKIP+AES*.

802.1X, WAP & WAP2 Enterprise And CCKM

These authentication modes use *802.1X* and with *EAP* authentication. When *802.1X* is selected, NEO uses *WEP* encryption with automatic (as opposed to static) keying. For the others, the user may choose *TKIP*, *AES* or *TKIP+AES* encryption.

2.4.2.2 EAP

This menu allows you to choose the *EAP* (Extensible Authentication Protocol) type used for 802.1x authentication to an access point.

The following EAP types are supported by *Wi-Fi Config*:

• **TLS:** Provides strong security via the use of client certificates for user authentication.

- **PEAPv0-MSCHAPv2:** Provides secure user authentication by using a TLS tunnel to encrypt EAP traffic. *MSCHAPv2* is used as the inner authentication method. This is appropriate for use against Windows Active Directory and domains.
- **PEAP-GTC:** PEAP authentication using GTC as the inner method which utilizes one time passwords (OTPs) for authentication against OTP data bases such as SecureID.
- **LEAP:** Is an authentication method for use with Cisco WLAN access points. LEAP does not require the use of server or client certificates. LEAP supports Windows Active Directory and domains but requires the use of strong passwords to avoid vulnerability to off-line dictionary attacks.
- **FAST-MSCHAPv2:** Is a successor to LEAP and does not require strong passwords to protect against off-line dictionary attacks. Like LEAP, EAP-FAST does not require the use of server or client certificates and supports Windows Active Directory and domains.

Server Certificate Verification

When the *Verify Server Certificate* box is checked, NEO will verify the certificate provided by the authentication server during the authentication process. This requires that an appropriate certificate be manually installed on NEO for the verification.

2.4.2.3 Encryption

The *Encryption* menu allows you to choose the type of encryption that will be used to protect transmitted data. Choose an *Encryption* method valid for your network from the dropdown menu. Only the *Encryption* options that are compatible with the type of *Auth. Mode* you've chosen will be listed. In fact, in some cases, this menu will not be available at all.
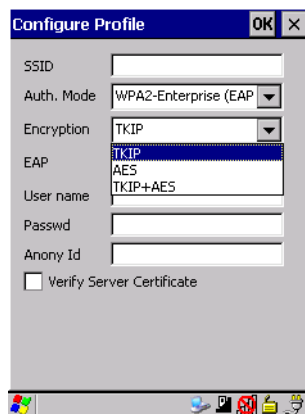
- Complete the fields in the **Configure Profile** screen. If you're uncertain about some of the options, your system administrative will be able to provide the correct information for your wireless network.

- Once you've completed the necessary fields, tap on **OK**.

2.4.2.4 Connecting The Wireless Network

Your configured network is listed in the *Configure* tab. An *[X]* next to a network indicates that this is the network to which NEO will connect.
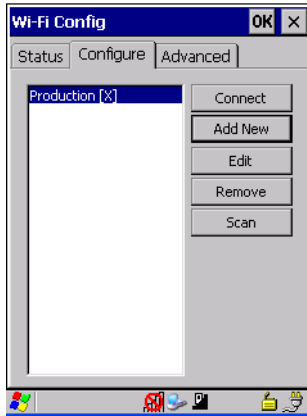
- Tap on the **Connect** button to activate your network.

The *Status* tab is displayed. The *Status field* displays *ASSOCIATING* while the 802.11b/g radio attempts to connect to the network. Once the association is complete, the *Status* tab is populated with the appropriate information about your network.
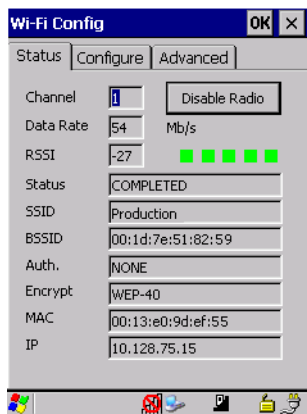
2.4.3 Configuring TCP/IP

If your network is not using a DHCP server, you will need to assign an IP address.

2.4.3.1 IP Address

To assign an *IP address* for your NEO:

• Tap on the **radio icon** in the taskbar,
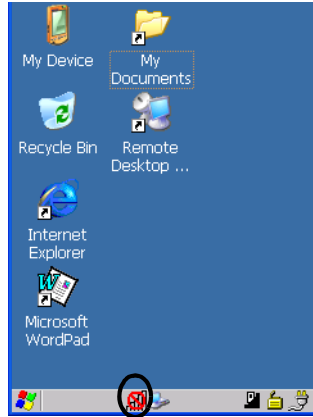
or

Tap on **Start>Settings>Network and Dial-up Connections**. Tap on the **radio icon** for which you want to assign an IP address – in the sample screen below, the icon is labelled *SDIO86861*.
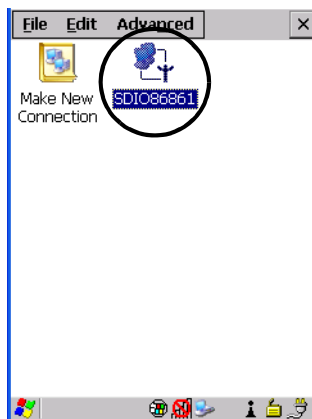
The *Wireless Statistics* screen is displayed.

- Tap on the **IP Information tab**.

Figure 2.1 SDIO86861 IP Information Tab
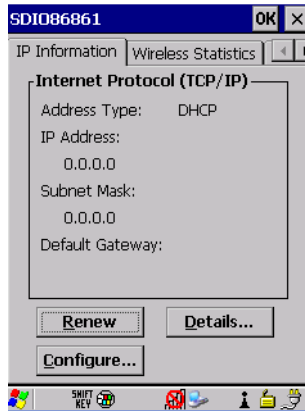
Note: When DHCP is enabled, tapping the 'Renew' button forces NEO to renew or find a new IP address. This is useful if, for example, you are out of communication range for a longer period of time and your hand-held is dropped from the network.

To define a static IP address:

- Tap on the **Configure** button.
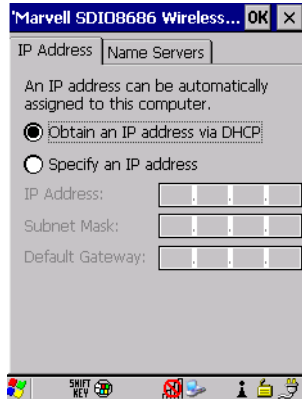
- Tap the stylus on the *radio* button next to **Specify an IP address** to select it.
- Type an **IP, Subnet Mask** and **Default Gateway** address in the appropriate fields. Press **[ENTER]** to save your information.

2.4.3.2 Name Server

Note: If DHCP is enabled, name server addresses are assigned automatically.

- In the *SDIO86861 IP Information* tab (see *Figure 2.1 on page 20*), tap on the **Configure** button.
- Tap on the **Name Servers** tab.
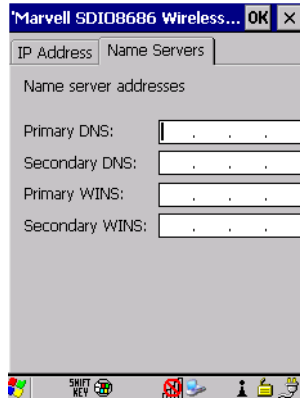
The DNS and WINS fields in the *Name Servers* tab allow you to specify additional WINS and DNS resolvers. The format for these fields is ###.###.###.###.

2.4.4   Advanced Tab

If you prefer to use *Wireless Zero Config*, the Windows native supplicant, to configure the radio:

- Tap on the **Advanced** tab, and tap on the checkbox to the left of **Use Windows to configure my wireless settings** to add a check mark and activate this option.

Tap here to add a checkmark to activate the Windows radio configuration.
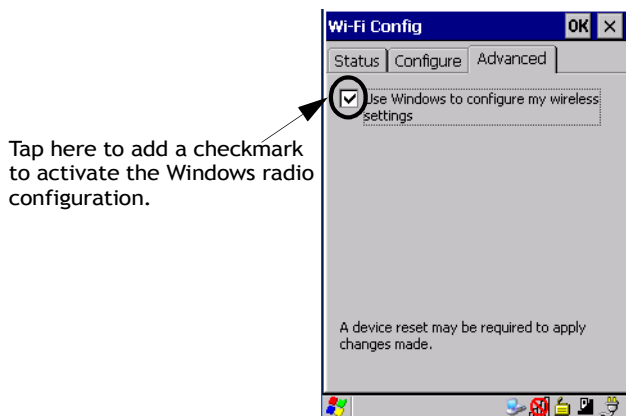
- You'll need to reset your NEO. Choose **Start>Shutdown>Warm Reset**.
- A dialog box is displayed letting you know that you will lose all unsaved data. Tap on **OK**.

Once the reset is complete, the *Wireless Zero Config* screen is displayed on your NEO. Refer to Appendix B: "Wireless Zero Config" for details.
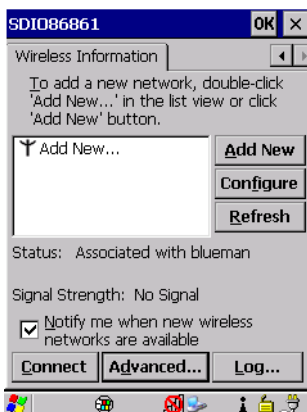
2.5   Checking The Scanner

If your hand-held is equipped with an internal scanner, you can test it to ensure that it is operating properly. Point the scanner window at a bar code that your scanner was designed to decode. Press the SCAN key or the pistol trigger, and check for a valid decode on the hand-held screen.

Performance is improved if you disable all unneeded bar codes in the *Bar Codes* screen. Review "Scanner Settings" on page 134 or details about bar codes.

2.6   Data Transfer Between The PC And The Hand-Held

Data transfer options vary slightly depending on the type of operating system installed in your PC. Microsoft® ActiveSync® is PC connectivity software that can be used to connect your hand-held to PCs running this software. ActiveSync works only with the Windows XP SP2 operating system or earlier.

If the Microsoft® Vista® operating system is installed in your PC, ActiveSync is not required to transfer data between NEO and your PC.

By connecting NEO to a PC with a cable, you can:

*   View NEO files from Windows Explorer.
*   Drag and drop files between NEO and the PC in the same way that you would between PC drives.
*   Back up NEO files to the PC, then restore them from the PC to the hand-held again, if needed, and so on.

2.6.1   Using Microsoft ActiveSync

To install ActiveSync, follow the step-by-step instructions provided with the program's setup wizard. Refer to the following website for details:

http://www.microsoft.com/windowsmobile/activesync/activesync45.mspx

2.6.2   Using Microsoft Vista

If you have Windows Vista, your NEO data transfers do not require ActiveSync. To transfer data between your PC and your hand-held:

• Tap on **Start>Computer** to display the drives. Your NEO will be visible here.

• Open drives, files and folders as you would on your PC.

2.7   Resetting NEO

2.7.1   Performing A Warm Reset

When you perform a *warm* reset, the operating system restarts *without* clearing the object store memory where the file system resides. Registry settings, installed programs and any data files are preserved. Any open applications are closed and any unsaved data are lost.

To execute a warm reset:

• Press and hold down the **[FN/BLUE]** key and the **[ENTER]** key simultaneously for a minimum of six seconds.

Note: You do not need to reset your NEO after configuring the radio.

2.7.2   Performing A Cold Reset

*Note: Cold reset is only listed in the Shutdown menu if the security level of the hand-held is set to **Supervisor** or **Teklogix**.*

A *cold* reset clears the object store memory and restarts the operating system. Registry settings are maintained, but any data and applications that are *not* stored in the Flash file system – called *Flash Disk* on NEO – or on a microSD card are lost. This should be used as a last resort if NEO cannot be reset using any other method.

To execute a cold reset and launch the Windows CE 5.0 operating system (bypassing the boot menu):

• Press and hold down the **[FN/BLUE] [FN/ORANGE]** and **[ENTER]** keys simultaneously for a minimum of six seconds.

GETTING TO KNOW NEO   3

3.1   Features Of NEO

Figure 3.1 Front View

LED
(Light Emitting Diode)

Receiver

Microphone

Protective Rib

Figure 3.2 Back View

3.2   The Battery

The hand-held operates with a Lithium-ion Battery, Model No. WA3020 and is also compatible with battery Model No. WA3006. Preparing the unit for operation requires that a battery pack be charged and installed in NEO.

3.2.1   Battery Safety

Important: Before attempting to install, use or charge the battery pack, it is <u>critical</u> that you review and follow the important safety guidelines in NEO Hand-Held Computer Regulatory & Warranty Guide, PN 8000175.

3.2.2   Removing The Battery Pack

!   *Important: **To protect against data loss, the NEO battery cover is equipped with a mag-
netic sensor; this sensor detects when the battery door is opened and
automatically places the hand-held computer into suspend mode so that
you can safely remove the battery.***

For details about unlatching the battery cover, review "Installing The Battery And Switching
The Unit On" on page 12.

3.2.2.1   Battery Swap Time

Assuming the default power saving parameters and battery reserve level have not been al-
tered, battery swap time is 10 minutes—you will not lose data if the battery is replaced
within this time frame.

The *Suspend Threshold* adjustment in the *Power Properties* tab allows you to determine the
battery capacity at which the hand-held will be shut down. If left at the default value,
Maximum Operating Time, the unit will run until the battery is completely empty; the RAM
is only backed up for a short period of time. If you choose *Maximum Backup Time*, the hand-
held shuts off with more energy left in the battery so RAM can be backed up for a longer
period of time.

Refer to "Suspend Threshold" on page 94 for details about reserving battery power for data
backup purposes.

3.2.3   Charging The Battery

Batteries shipped from the factory are charged to approximately 40% of capacity. They must
be fully charged prior to use.

3.2.3.1   Charging Options

!   *Important: **FOR DETAILED INFORMATION about charging options, refer to
Chapter 6: "Peripheral Devices & Accessories".***

Lithium-ion batteries must be charged before use. These batteries can be charged with a
variety of adaptors and docking stations. These include:

- AC Wall Adaptor (Model No. PX3010)—operates as an AC power source and when
  used in conjunction with PX3001 or PX3054, also charges the battery installed in
  the unit.

- Cigarette Lighter Adaptor (Model No. PX3056) when used with a USB/DC Power Adaptor (Model No. PX3054).

- Desktop Docking Station (Model # PX3001)—operates as both a charger and a docking station. Operating as a charger, both the battery installed in the hand-held and a spare battery can be charged simultaneously.

- Quad Docking Station—(Model # PX3004) can charge the battery of up to four NEOs inserted in the docking station.

The charge time required to make the NEO ready for use varies depending on the type of docking station used. A NEO inserted in docking station requires 3 hours to charge the battery to 75% capacity. NEO is equipped with an intelligent charging system that protects the battery from over-charging by terminating the charge process when the battery is at maximum capacity.

Note: The specified battery charge times are based on NEO in suspend mode. Additional peripherals and other power consumption features will alter the specified charge time.

Note: Refer to "Monitoring The Battery And Maximizing Run Time" on page 40 for additional information about the battery.

Important: **To avoid damaging the battery, the charge process will not begin until the battery temperature is between 0°C to 45°C (32°F to 113°F).**

3.3 Switching The Hand-Held On And Off

- To switch the unit on, press and hold down the [ENTER] key for at least one second.

- When the LED flashes green, release the [ENTER] key.

The startup screen is displayed.

Note: If NEO is in suspend state, pressing [ENTER] 'wakes' the unit from this state. The screen in which you were working before the computer entered suspend state is displayed.

Switching Off NEO (Suspend)

Important: **Keep in mind that turning off NEO does _not_ result in a complete reboot; rather, the unit enters a power-saving, "suspend" state. When the unit is turned on from suspend state, operation resumes within a few seconds.**

- To switch the unit off, press [FN/BLUE] [ENTER].

3.4   The Keyboard

Two keyboard options are available:

- 48-key alpha-numeric keyboard. This keyboard is only available with *connected* hand-helds – units equipped with 802.11b/g radios.

- 26-key numeric keyboard. This option is available for both variants of NEO – *connected* hand-helds (described above) and *batch (unconnected)* hand-helds *not* equipped with 802.11b/g radios.

Most of the keys on these keyboards operate much like a desktop computer. Where a key or key function is not consistent with the PC keyboard, the differences are noted.

The [FN/BLUE] and [FN/ORANGE] modifier keys provide access to additional keys and system functions. These functions are colour coded in *orange* and *blue* print on the keyboard keys.

3.4.1   Modifier Keys

The [SHIFT], [CTRL], [ALT], [FN/BLUE] and [FN/ORANGE] keys are *modifier* keys. Pressing a modifier key changes the function of the next key pressed.

The [SHIFT], [CTRL] and [ALT] keys operate much like a desktop keyboard except that they are not chorded (two keys held down simultaneously). The modifier key must be pressed first followed by the key whose function you want modified.

3.4.1.1   Activating Modifier Keys

When a modifier key is pressed once, it is displayed in lowercase letters in the taskbar at the bottom of the hand-held screen. For example, if the [CTRL] key is pressed, *ctrl key* is displayed at the bottom of the unit screen. Once the next key is pressed, the modifier key becomes inactive and disappears from the taskbar.

Keep in mind, however, that the 'One Shot' function allows you to determine how many key presses will lock a modifier key 'on' – one press or two. Refer to "Keyboard One Shot Modes" on page 82 for details.

3.4.1.2   Locking Modifier Keys

When a modifier key is pressed twice, it is 'locked' on. A 'locked' modifier key is displayed in uppercase letters in the taskbar. For example, pressing the [CTRL] key twice locks it on – it is displayed as **CTRL KEY** in the taskbar at the bottom of the computer screen.

The locked modifier key will remain active until it is pressed a third time to unlock or turn it off. Once a modifier key is unlocked, the uppercase representation at the bottom of the screen is no longer displayed.

3.4.2   The Keys

The [SHIFT] Key

The [SHIFT] key provides access to uppercase alpha characters, and on *numeric* hand-helds, it also provides access to the symbols displayed in *white* print on the keys.

To lock the keyboard into uppercase, *CAPS-lock*, press [FN/BLUE] followed by [SHIFT]. A *CAPS-lock* icon – a blue capital letter *A* within a white box – appears in the taskbar. To unlock or turn off CAPS-lock, press [FN/BLUE] [SHIFT] again.

The Arrow Keys

The Arrow keys move the cursor around the screen in the direction of the arrow: up, down, left and right. The cursor is the flashing box or underline character that indicates where the next character you type will appear.

The [SPACE] Key

Pressing this key inserts a blank space between characters. In a Windows dialog box, pressing the [SPACE] key enables or disables a checkbox.

The [<−/DEL] Key

This key allows access to both the backspace and the delete function. The backspace function represented by an arrow [<—] (sometimes referred to as destructive backspace) moves the cursor one character to the left, erasing the incorrectly entered key stroke.

The delete function ([FN/BLUE] [<—/DEL]) erases the character at the cursor position.

The [CTRL] And [ALT] Key

The [CTRL] and [ALT] keys modify the function of the next key pressed and are application-dependent.

The [TAB] Key

Typically, the [TAB] key moves the cursor to the next field to the right or downward.

The [ESC] Key

Generally, this key is used as a keyboard shortcut to close the current menu, dialog box or activity and return to the previous one.

The [SCAN] Key

All units are equipped with a yellow [SCAN] key. For units that *do not have* internal scanners, this key can be re-mapped to another function.

3.4.3   Function Keys And Macro Keys

In addition to the standard keyboard functions, NEO supports Function keys and Macro keys. All Function and Macro keys can be custom defined for each application.

3.4.3.1   Function Keys

The hand-held keyboard is equipped with a total of 10 function keys colour coded in *blue* print on the numeric keys; these keys are accessed by executing a key combination, [FN/BLUE] followed by the appropriate numeric key.

Note: The [TAB], [ALT], [CTRL] and [ESC] keys have [F1] through [F4] printed on them; these are only labels and are provided so that the operator can create direct-press function keys using the keyboard remapping feature. Refer to "Scancode Remapping" on page 84 for details about mapping keys.

For example, to access function key [F7]:

- Press the [FN/BLUE] key followed by the [7] key—the numeric key to which function key [F7] is mapped.
- To access function key [F8], press [FN/BLUE] [8], and so on.

3.4.3.2   The Macro Keys

While macro keys are not physically stamped on the keyboard, up to 12 macro functions can be added using the *Scancode Remapping* function. Refer to "Scancode Remapping" on page 86 for details about mapping keys. Refer to "Keyboard Macro Keys" on page 83 for details about programming characters in a Macro key.

3.4.4   26-Key Keyboard: Accessing Alpha Keys

On numeric 26-key keyboards, numeric keys are directly accessible, and all alpha characters are printed on the keys in orange characters. An indicator in the left corner of the taskbar displays the currently selected character. To access an alpha character, first press the [FN/ORANGE] key and then press the numeric key above which the alpha character you want to type is printed.

Choosing A Single Alpha Character

The examples below illustrate how to access, A, B, and C, all of which are printed in orange characters above the numeric key [2].

> ⚠️ ***Important:*** *The letters you choose appear in the taskbar, providing a visual indicator of which letter will be displayed on the screen.*

To choose the letter **a**:

•   Press the [FN/ORANGE] key, and press the numeric key [2].

> 📖 *Note: To choose the second, third or fourth alpha character assigned to a numeric key, you may want to lock the [FN/ORANGE] key 'on'. By default, the [FN/ORANGE] key is locked 'on' when pressed once. However, depending on how your unit is set up in the 'One Shots' tab, you may find that you need to press the [FN/ORANGE] key twice to lock it 'on'. Refer to "Keyboard One Shot Modes" on page 82 for details.*

To choose the *second* letter in the sequence—in this example, the letter **b**:

•   Lock the [FN/ORANGE] key 'on'. 'ORG KEY is displayed in upper-case characters in the taskbar to indicate that this key is locked 'on'.

•   Press numeric key [2] twice to display the letter **b**.

To choose the third letter in the sequence—in this example, the letter **c**:

•   Lock the [FN/ORANGE] key 'on'.

•   Press numeric key [2] *three times* to display the letter **c**.

> 📖 *Note: Keep in mind that there is a timeout if you pause for one second between key presses when selecting the second, third or fourth letters on a key. For example, suppose you want to type the letter 'c' – you'd need to press the [2] key three times. With the [FN/ORANGE] key locked 'on', if you press [2] twice and then pause between key presses for 1 second, the letter 'b' will be selected automatically.*

Creating Uppercase Letters

To display a capital letter:

•   Press the [FN/ORANGE] key and then the [SHIFT] key before typing the alpha character.

> 📖 *Note: If you want to use uppercase characters at all times, press [FN/BLUE] [SHIFT]. An icon of an uppercase 'A' is displayed in the taskbar indicating that all letters will be displayed as uppercase characters.*

Choosing Multiple Alpha Characters

• Lock the [FN/ORANGE] key 'on'.

Each time you press a numeric key from [2] through [9], an alpha character will be displayed on the screen. Remember that you can refer to the softkey bar for a visual indication of which alpha key will be displayed on the screen.

> ⚠ *Important:* ***Once you have finished typing alpha characters, remember to turn off or unlock the [FN/ORANGE] key.***

3.4.5 The Keyboard Backlight

The intensity of the keyboard backlight and the conditions under which this backlight is activated can be configured using the *Keyboard* icon in the Windows CE 5.0 *Control Panel*. The behaviour of the keyboard backlight is tailored in the *Keyboard Properties* dialog box. Refer to "Keyboard Backlight" on page 81 for details about this option.

> 📖 *Note: Keep in mind that this option may be restricted to supervisory use only.*

3.5 The Display

NEO hand-helds are equipped with display backlighting to improve character visibility in low light conditions. The backlight switches on when a key is pressed or the screen is tapped.

3.5.1 Adjusting The Display Backlight

The *Display Properties* dialog box in the *Control Panel* allows you to determine the behaviour of the display backlight and its intensity. Refer to "Display Backlight" on page 76 for details about the *Display Properties* dialog box.

Note that you can also adjust the backlight directly from the keyboard by pressing the [FN/BLUE] key followed and the [LEFT ARROW] and [RIGHT ARROW] arrow keys to increase or decrease the backlight intensity.

3.5.2 Calibrating The Touchscreen

If your NEO touchscreen has never been calibrated, or if you find that the stylus pointer is not accurate when you tap on an item, use the *Stylus Properties* dialog box in the *Control Panel* to recalibrate the screen.

• In the *Control Panel*, choose the **Stylus** icon to display the *Stylus Properties* window.

Figure 3.3 Stylus Icon
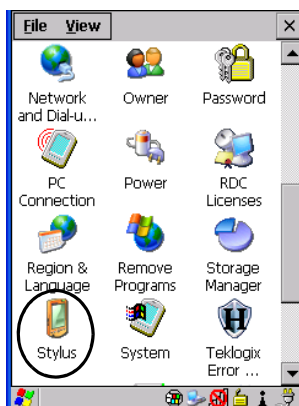
• Select the **Calibration** tab, and then choose the **Recalibrate** button.

Figure 3.4 Calibration Screen
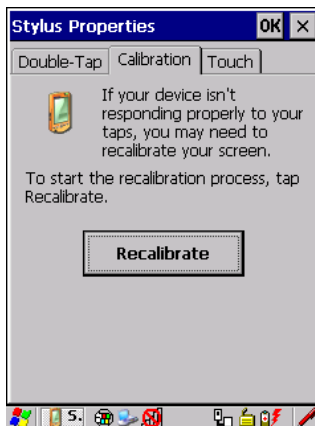
• Follow the directions on the calibration screen to calibrate the screen.

3.6   NEO Hand-Held Indicators

NEO uses an LED (Light Emitting Diode), onscreen messages and audio tones to indicate the various conditions of the hand-held, the batteries, the scans and so on.

3.6.1   LED Indicator

A tri-coloured LED – yellow, green or red – is located on the upper-left side of the unit, above the screen.

Keep in mind that the application running on NEO can dictate how the LED operates. Review the documentation provided with your application to determine LED behaviour.

The scanner also overrides LED behaviour. The table below describes what the various LED colours indicator when a scan is activated – a scanner button is pressed or the scanner trigger is pulled.

Table 3.1   NEO Scanner LED Behaviour

LED Behaviour	Scan Status
Solid Red	Indicates the scanner is firing.
Blinking Red	Unsuccessful decode.
Solid Green	Successful decode.

Note: During the first two minutes of a battery charge, the LED remains solid yellow while the hand-held computer status is assessed.

If the unit is attached to an external power supply, the hand-held LED reflects the battery charge status.

Table 3.2   NEO Charge LED Behaviour

LED Behaviour	Charge Status
Solid Yellow	Battery charged to less than 75% capacity.
Flashing Green	Battery charged to between 75% and 95% of capacity.
Solid Green	Fully charged.
Flashing Yellow	Temperature outside charge range (0°C to 45°C).
Solid Red	Battery is not charging. Battery fault warning.

3.6.2   Audio Indicators

The audio receiver provides a variety of sounds when a key is pressed, a keyboard character is rejected, scan input is accepted or rejected, an operator's entry does not match in a match field or the battery is low. To specify how you want your NEO to respond under various conditions, refer to "Volume And Sound Properties" on page 90.

The volume keys are located above the [UP ARROW] and [DOWN ARROW] keys. The increase volume key is labelled with a plus symbol ◀))₊ and the decrease volume key is labelled with a minus symbol ◀))₋ .

3.6.2.1 Adjusting The Receiver Volume

- Lock the [FN/BLUE] key 'on' and then, press [UP ARROW] – the *increase volume key* or [DOWN ARROW] – the decrease volume key until the volume meets your requirements.
- Remember to press the [FN/BLUE] key again to turn it 'off'.

3.6.3 Onscreen Indicators

The taskbar at the bottom of the screen displays a variety of system status indicators.

Figure 3.5 Taskbar
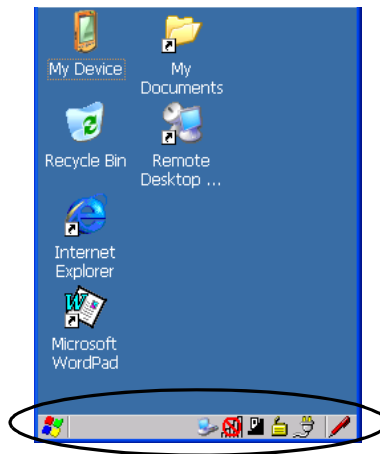
Note: This sample screen is present on units running 'Windows CE 5.0 Professional; the desktop screen for a 'Batch' NEO running 'Windows CE 5.0 Core' differs slightly from the sample screen above; in the 'Core' version, the icons for Internet Explorer, Wordpad and Remote Desktop are not visible.

The taskbar changes dynamically, and only those icons that are applicable are displayed. For example, if a radio is not installed in your NEO, the radio signal icon is not displayed in the taskbar.

Windows® Start Button

If you are using the touchscreen, you can either tap the Windows icon at the bottom left of the screen, or press [FN/BLUE] [.] (period) to display the *Start Menu*, and then tap on the desired application.

Modifier Key Indicators

[SHIFT], [CTRL], [ALT], [FN/BLUE] and [FN/ORANGE] are modifier keys that when pressed, are displayed in the taskbar to indicate that they are active. If a modifier key is locked 'on', it is displayed in ***uppercase*** characters. For example, if the [FN/BLUE] key is locked on, it is displayed as **BLUE KEY** in the taskbar. A locked modifier key remains active until it is pressed again to unlock or turn it off.

If a modifier key has been pressed but is not locked on, it is displayed in the taskbar in ***lowercase*** characters – for example, **blue key**. It will remain active only until the next key is pressed at which point, the modifier key is turned off.

*Note: The locking function of the modifier keys can be set up so that pressing one of these keys **once** will lock the key 'on'. They can also be set up so that they must be pressed twice to be locked 'on'. Refer to "Keyboard One Shot Modes" on page 82 for details.*

Battery Gauge

The battery shaped icon displayed in the taskbar provides a visual indication of the remaining battery power. The icon acts as a meter that is either full, at three-quarter level, half, quarter level or empty.

When the battery level is low—approximately 15 minutes from empty—a warning window pops up. When the battery power is completely depleted, a final warning window indicates that NEO will be powered down.

If NEO is using external AC power, an AC icon is displayed in the taskbar.

Full	75%	50%	25%	Empty	AC Connection

Battery Charge

The battery charge icon is displayed in the taskbar when the hand-held battery is being charged.

802.11 Radio Signal Quality

Increasing radio signal quality is represented by longer, filled bars within this icon.

Good
Reception

Weak
Reception

No Radio
Link

Docking Device

When a hand-held is inserted in a docking station, an associated icon appears in the taskbar.

Bluetooth Radio

This icon displayed in the taskbar represents the installed *Bluetooth* radio.

Security Level

Security levels can be set to limit user access. In addition, applications can be restricted to prevent inadvertent changes.

3.7   Monitoring The Battery And Maximizing Run Time

*Note: The battery status is displayed in the **Power** applet in the Control Panel. A 'very low power' warning message is displayed automatically if the battery capacity falls to 1%. You can also set the percentage at which a 'low power' message is displayed using the **Advanced** tab in the **Power Properties** dialog box; it is set to 10% by default. Refer to "Power Properties" on page 92 for details.*

As lithium-ion batteries age, their capacity decreases gradually, and they are generally considered depleted after approximately 2 years of use (less than 60% of original capacity remaining). Keep in mind however that heavy usage or operating the unit at temperature extremes will shorten the battery life.

Lithium-ion batteries do not require conditioning cycles and the NEO battery system does not require user interaction to maintain peak performance.

To determine the remaining charge in the battery, you can tap on the *Power* icon in the *Control Panel* to display a dialog box that provides detailed information about the battery status of the main battery installed in your unit. You can also tap on the *Power* icon in the taskbar to display the battery status.

To maximize the run time of your batteries, consider the following:

• The hand-held is 'event' driven—that is, when the unit is not in use, it reverts to sleep mode (even when it appears to be running), saving battery power. Events include a key press, touchscreen taps and scan triggers. Power consumption is reduced if you avoid unnecessary events, and allow the unit to sleep as much as possible.

• NEO uses a *smart battery* with built-in intelligence.

  Tapping on the *Power* icon in the *Control Panel* displays a dialog box that provides detailed information about the battery status of the main battery installed in your unit.

• When the hand-held is switched off, it goes into a low-power, suspend state but continues to draw a small amount of power from the battery. This should not be an issue unless the unit is left in suspend state for more than a week—for long-term storage, the battery should be removed from the unit.

• Reduce display brightness.

• Turn off the keyboard backlight if not required.

3.7.1   Storing Batteries

Long term battery storage is not recommended. If storage is necessary:

• Always try to use a 'first-in first-out' approach to minimize storage time.

• Lithium-ion batteries age much faster at elevated temperatures. Store batteries at temperatures between 0 °C and 20 °C (32 °F and 68 °F).

• Always charge batteries to at least 40 to 60% before storing them. Batteries can be damaged by an over-discharge phenomenon that occurs when an empty battery is stored for a long period of time such that the cell voltage drops below a lower limit.

• To minimize storage degradation, recharge stored batteries to 40 to 60% every 4 or 6 months to prevent over-discharge damage.

• A 'never used' lithium-ion battery that has been stored for 3 years may have limited or no useful life remaining once put into service. Think of batteries as perishable goods.

3.8   Uploading Data In A Docking Station

⚠️ ***Important: Review the documentation provided with the user application installed in your NEO before performing data uploads.***

The desktop docking station and quad docking station are typically used to upload transaction data to a server computer when a radio link is not available.

📖 *Note: Refer to "Desktop Docking Station – PX3001" on page 188 for more details.*

The desktop docking station can complete batch uploads to a Client USB connected PC or server. An optional 10/100baseT Ethernet connection can be used via the USB to Ethernet cable (Model No. PX3052).

Unlike the desktop docking station, the quad docking station supports only TCP/IP connections to a PC or server through a 10/100baseT Ethernet connection.

When a NEO is properly inserted in a docking station, a dock icon is displayed in the navigation bar at the top of the screen. The unit also detects the presence of the Ethernet network.

3.9   *Bluetooth* Radio

📖 *Note: Integrated **Bluetooth** Class 2 radios are standard on 'connected' NEOs – that is, units equipped with 802.11 radios. On 'batch' (unconnected) units, **Bluetooth** is an optional feature.*

The *Bluetooth* radio enables short range data communication between devices. In addition, it provides the capability to use a *Bluetooth*-enabled cellular phone as a data modem, exchanging information with other *Bluetooth* devices and providing network access. You can also pair your hand-set with a *Bluetooth* headset. Refer to "Bluetooth Setup" on page 102 for setup details.

3.9.1 Pairing A *Bluetooth* Headset Or Other *Bluetooth* Device

*Note: If the **Bluetooth** radio is not already enabled, tap on the **Power** icon in the Control Panel, tap on the **Devices** tab and enable the **Bluetooth** radio.*

To pair a headset:

- Follow the headset manufacturer's instructions to place the headset you want to place in pairing mode.
- In the *Control Panel*, tap on the *Bluetooth* icon choose the *Devices* tab and scan for devices in your area. (Note that if you're pairing the device for the first time, the device scan occurs automatically—you do not need to tap on the *Scan* button to perform a scan.)

When the scan is complete, all available devices are listed.

- Double-click on the **headset** you want to pair with. If you prefer, you can highlight **headset** and tap on the **Services** button.

If the headset has authentication enabled, a dialog box appears requesting that you enter a PIN number.

- Type your **pin number** and tap on **OK**.

A *Services* dialog box appears listing *headset*.

- Press and hold the stylus on **headset**. In the pop-up menu, choose **Active**.

Your headset is now paired. A COM/BSP port name will now appear beside the service for this device. An asterisk will appear under the *Active* list in the *Service* screen.

3.10 The microSD Card

A microSD card slot is available in the battery compartment. microSD cards provide additional, non-volatile memory to your hand-held.

3.10.1 Inserting The Card

- Switch off NEO.
- Remove the battery cover and the battery.
- Gently slide the SD door down and then flip it forward.

- Slide the microSD card onto the guides on the SD door – position the card with the connector pads at the bottom so that when the door is closed, they make contact with the connectors in the unit.
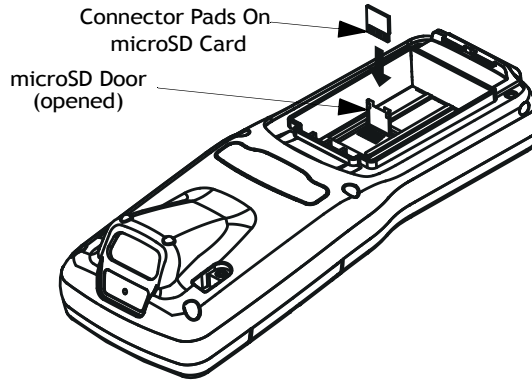
- Carefully flip the SD door down, and slide it upward to lock it in place. Do ***not*** force it.
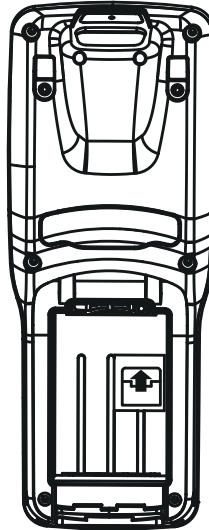
3.11   General Maintenance

3.11.1   Caring For The Touchscreen

The top of the touchscreen is a thin, flexible polyester plastic sheet with a conductive coating on the inside. The polyester can be permanently damaged by harsh chemicals and is susceptible to abrasions and scratches. NEO is equipped with a stylus that is designed to safely select items on the touchscreen. Use *only* the stylus on the touchscreen; using sharp objects on the touchscreen can scratch or cut the plastic, or crack the internal conductive coating.

The chemicals listed below must not come into contact with the touchscreen:

*   sodium hydroxide,
*   concentrated caustic solutions,
*   benzyl alcohol, and
*   concentrated acids.

Note: An optional protective cover (PN 1081366) is available to help protect the touch-screen. Follow the installation instructions shipped with the cover.

3.11.2   Cleaning NEO

Important: Do not immerse the unit in water. Dampen a soft cloth with mild detergent to wipe the exterior of the unit clean.

*   Use *only* mild detergent or soapy water to clean the hand-held unit.
*   Avoid abrasive cleaners, solvents or strong chemicals. The plastic case is susceptible to harsh chemicals; it is partially soluble in oils, mineral spirits and gasoline. The plastic slowly decomposes in strong alkaline solutions.
*   To clean ink marks from the keyboard and touchscreen, use isopropyl alcohol.
*   When using a dampened cloth to clean NEO, make certain that the battery cover is in place to protect the battery compartment from moisture.

WORKING WITH WINDOWS CE 5.0   4

4.1 Navigating In Windows CE 5.0

Note: In order to access many of the menus discussed in this chapter, the security level must be set to 'Supervisor' (see "Security Settings" on page 57).

Graphic user interfaces like Windows CE 5.0 for portable devices and desktop Windows (2000, XP, etc.) utilize 'point and click' navigation. An equivalent keyboard shortcut is also available for every 'point and click' action.

Windows CE 5.0 supports the same 'point and click' user interface and keyboard shortcuts as desktop Windows with one difference—the 'point and click' action is accomplished using a touchscreen rather than a mouse. Actions can be performed using any combination of keyboard shortcuts or touchscreen tapping.

4.1.1 Navigating Using A Touchscreen And Stylus

Note: If the touchscreen is not registering your screen taps accurately, the touchscreen may need recalibration. Refer to "Calibrating The Touchscreen" on page 35.

Each NEO is equipped with a stylus—a pointing tool that looks like a pen. The stylus is used to select objects on the touchscreen.

Note: To prevent damage to the touchscreen, use only the stylus (pen) supplied with your NEO.

To choose an icon, open a file, launch an applet, or open a folder:

• Double-tap the stylus on the appropriate icon.

4.1.2 Navigating Using The Keyboard

If your NEO touchscreen has been disabled, you can use the keyboard to choose icons, navigate dialog boxes, display the desktop, and so on. If your unit has already been fully configured and your application is launched at startup, you'll have little need for keyboard navigation, but you can refer to Table 4.1 for a description of the navigation keys.

Table 4.1 Keyboard Navigation

Operation	Key or Key Combination
Switch between active applications	[ALT] [TAB]
Open task manager	[ALT] [ESC]

Table 4.1   Keyboard Navigation

Operation	Key or Key Combination
Move the cursor	Arrow keys
Open file, folder or icon	[ENTER]
Exit & Save	[ENTER]
Close/Exit & Do Not Save	[ESC]
Navigate Dialog Boxes	[TAB]
	To move cursor up: [SHIFT] [TAB]
	To display the contents of the next 'tab' in a dialog box: [CTRL] [TAB]
Select/Deselect Radio Button & Press Button	[SPACE]
Go to Start Menu	[FN/BLUE][.] or [CTRL][ESC]

Keep in mind that unlike a desktop computer, NEO does not support key chording (pressing two keys at the same time). You must press one key followed by the next in sequence. Refer to Section 4.2: "Working With Files, Folders And Programs" for additional details about keyboard navigation.

4.2   Working With Files, Folders And Programs

Figure 4.1 Working With Windows Icons
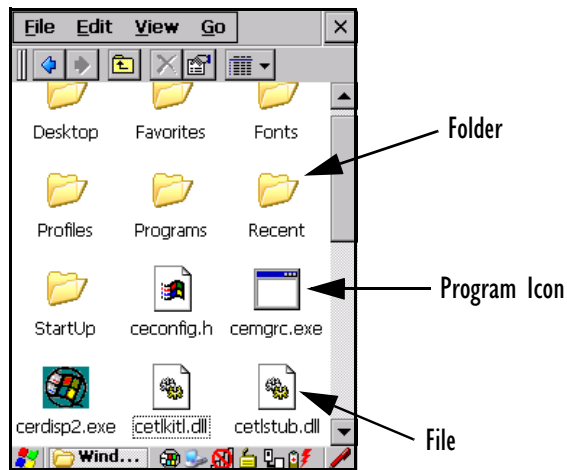
- Double-tap on the appropriate icon—either a folder icon, a program icon or a file icon—to open or launch your selection.

If you're using the keyboard:

- Use the arrow keys to highlight the icon you want to open or launch.
- Press [ENTER].

4.3 The Startup Desktop

When NEO boots up, the startup desktop (shell) is displayed. Any applications stored in the Startup folder start up immediately.

Note: The startup folder is located in \Windows\StartUp and \Flash Disk\StartUp.

Figure 4.2 NEO Startup Desktop
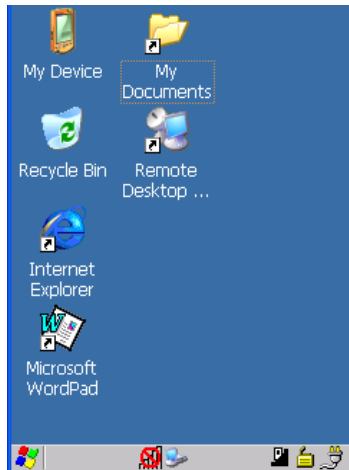
To access desktop icons:

- Double-tap on the icon to open a window or, in the case of an application icon, launch an application.

On the keyboard:

- Use the arrow keys to highlight the icon, and press [ENTER] to launch the highlighted icon.

> *Note: If the arrow keys do not highlight the desktop icons, the desktop may not be selected. Press [FN/BLUE] [.] (period) to display the Start Menu, and select Desktop. Now the desktop will be "in focus" and the arrow keys will highlight the icons.*

4.3.1 The Desktop Icons

> *Note: NEOs are equipped with the Windows CE 5.0 Core OS do not include Internet Explorer, Wordpad or Remote Desktop.*

The icons displayed in the startup desktop operate in much the same way as those displayed on any standard PC desktop that is running Windows.

My Device

Choosing this icon displays the contents of your NEO computer. If you're not sure how to access the files, folders and programs displayed, refer to "Working With Files, Folders And Programs" on page 50.

Recycle Bin

This option temporarily stores items that were deleted, allowing you to either permanently delete or restore these items.

Internet Explorer

Choosing this icon launches Internet Explorer—a standard Windows CE 5.0 version. Keep in mind that your supervisor will need to set up access using the *Internet Options* and the *Network and Dial-up Connections* icons in the *Control Panel*.
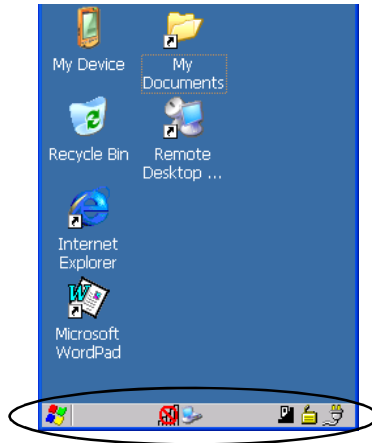
Microsoft WordPad

Microsoft WordPad is a basic word processor used to create, edit, view and print text documents.

Remote Desktop Connection

This option allows your NEO to communicate with a remote desktop PC. "Remote Connect" on page 71 provides a website with step-by-step instructions.

4.3.2   The Taskbar

NEO is equipped with a taskbar at the bottom of the screen. It displays icons through which you can view the battery capacity and radio signal quality of your unit. If the hand-held is attached to a docking station or adaptor, an associated icon is displayed. In addition, the taskbar displays the application(s) currently running on your unit and the security level assigned to your NEO.

The taskbar also displays active modifier keys: [SHIFT], [ALT], [CTRL], [FN/BLUE] and [FN/ORANGE]. Keys that have been locked "on" are displayed in uppercase letters. For example, if you have set the [CTRL] key Lock to "on" in the Keyboard menu and you press the key, it is displayed as CTRL KEY in the taskbar. (For detailed information on modifier keys and keyboard options, see "The Keyboard" on page 31).

4.3.2.1   Using The Taskbar

A tooltip is displayed as each taskbar icon is highlighted. The tooltip provides the status of each icon.

If you're using the touchscreen:

•   Tap and hold the stylus on an icon to display the icon's tooltip. Double-tap the icon to open the *Control Panel* dialog box associated with the icon. For example, double-tap the battery icon to display a dialog box listing the current battery capacity information.

On the keyboard:

•   Press [FN/BLUE] [.] (period) to display the *Start Menu*.
•   Press the [DOWN] arrow key to highlight **Shortcuts** in the *Start Menu*, and then press the [RIGHT] arrow key to display the sub-menu.

- Choose **System Tray** in the sub-menu.
- Use the arrow keys to highlight the icon in the taskbar about which you'd like more information.
- Press [ENTER] to display the appropriate dialog box.

4.3.2.2 Customizing The Taskbar

To customize the taskbar so that it displays only those icons you require:

- In the *Start Menu*, choose **Settings>Taskbar**.

If you're using the keyboard:

- Press [FN/BLUE] [.] to display the *Start Menu*.
- Highlight the **Settings** option, highlight **Taskbar** in the sub-menu, and press [ENTER].

The *Taskbar and Start Menu* dialog box is displayed.
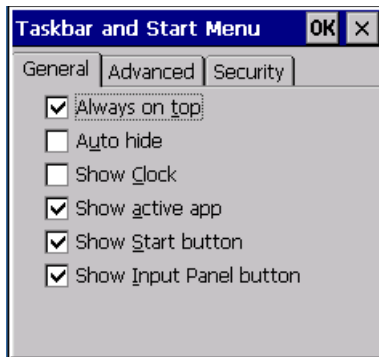
Taskbar General Tab

- Tap the stylus on the items you want to activate or deactivate. The check mark indicates active items.

If you're using the keyboard:

- Highlight the options you want to activate, and press the [SPACE] key to select them. The check mark indicates active items.

Taskbar Advanced Tab

- Tap on the **Clear** button to empty the *Documents* folder.
- To display *Control Panel* applets in menu form rather than in a window, tap in the checkbox next to *Expand Control Panel*.

Taskbar Security Tab

If you check *Disable hot keys*, the *Application from Start menu* field becomes enabled. Use this field to enter the name of the application you want to run when the user presses the *Menu* hot key: [FN/BLUE] [0].

If you have disabled hot keys, hidden the *Start Menu* and have no application configured, the *Menu* hot key brings up the *Security* dialog box to allow authorized users to access the hand-held configuration. Keep in mind that this dialog box is also displayed if an invalid application is entered in the *Application from Start Menu* field.

4.4   The Start Menu

Note: Some of the Start Menu items may be disabled based on the current NEO security settings.

The *Start Menu* lists the operations you can access and work with. It is available from the startup desktop or from within any application.

To display the menu:

• Tap on the **Start Menu icon** in the lower-left corner of the taskbar. Tap on the item with which you want to work.

If you're using the keyboard:

• Press [FN/BLUE] [.] (period).
• Use the arrow keys to highlight a menu item, and press [ENTER].
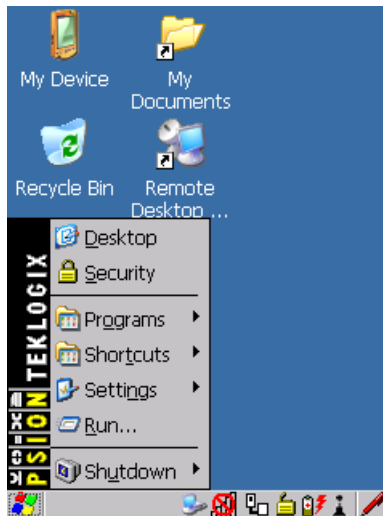
Note: If a 'Start Menu' item has an underlined character, you can type the underlined alpha character to display the associated dialog box– for example, displaying the 'Start Menu' and then typing the letter 's' displays the 'Security' dialog box.

4.4.1   The Desktop

Choosing *Desktop* in the *Start Menu* displays NEO desktop.

4.4.2   Security Settings

Choosing the *Security* option from the *Start Menu* displays a dialog box in which you can define the access level for NEO: *Supervisor* or *User*.
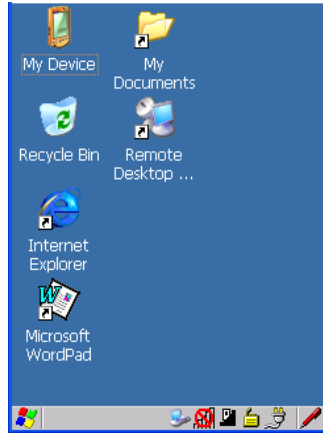
Figure 4.3 Security Levels

Assigning The Supervisor Security Level

The security level is represented by an icon in the shape of a lock in the taskbar. The security levels define the options accessible to the operator in the *Start Menu* and the *taskbar*. By default, the security level is set to *User*, restricting access to only the most basic *Start Menu* items.

To allow access to all the *Start Menu* and *taskbar* options:

• In the *Security Level* dialog box, tap on the radio button next to *Supervisor*.

- In the *Password* field, type the Supervisor level password. The default password is **123456**.

- Tap on **OK**. You can now access all menu items in the *Start Menu* along with the icons in the taskbar.

Changing A Password

Note: Keep in mind that this is the same password as that assigned through the Password control panel applet. Refer to "Control Panel Icons" on page 72.

To assign a password:

- Choose a *security level*, and enter the **existing password** in the *Password* field.
- Tap on the **Set Password** button.

A dialog box labelled *Password Properties* is displayed.

- Type the new password in the *Password:* text box (all keyboard characters are valid).
- In the *Confirm Password:* text box, retype the new password.

Configuring Security

Choosing the **Configure** button displays the *Configure Security* dialog box.
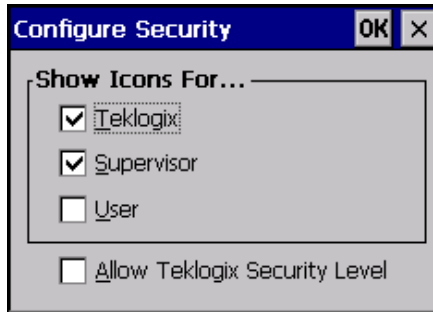
This dialog box allows you to determine which security levels will have an associated icon displayed in the taskbar. By default, a security icon is not displayed for user-level security.

Note: It is recommended that you enable 'Allow Teklogix Security Level' so that authorized Psion Teklogix service personnel can access your unit should it require maintenance.

4.4.3   Programs

• Choose **Start>Programs** to display a sub-menu of options.

Figure 4.4 Programs Sub-Menu

> *Note: The sample Program menu above is for NEOs equipped with the Windows CE 5.0
> Professional OS. NEOs equipped with the Windows CE 5.0 Core OS have a more
> limited Program menu that includes only ActiveSync, Demo, Command Prompt and
> Windows Explorer.*

ActiveSync®

This option allows you to connect to another device using ActiveSync.

Demo

This folder contains the *Demo Scanner*, *Demo Signature* and *Demo Sound* applications.
Demo Scanner can be used to test how the hand-held reads and writes bar codes. *Demo Signature* allows you to capture a signature written on the screen with your stylus and save it to
a file. *Demo Sound* allows you to record and playback. The 'Sample Rate' and the 'Bits Per
Sample' are the rates at which the sound will be recorded. Sounds recorded at the higher
sample rate or bits per sample will be higher quality sound but will require more file storage
space. Lower sample rates and/or bits per sample produces a smaller file, but the sound
quality suffers. The record and play buttons operate in the same as on any recording device.
The *X* icon deletes the sound and the *diskette* icon allows you to save your sound.

Command Prompt

Command Prompt is used to access the DOS command prompt. At the prompt, you can type
DOS commands such as *dir* to display all the directories in the drive.

Internet Explorer

NEO is equipped with Microsoft Internet Explorer for Windows CE 5.0. You can access the *Internet Options* icon through the *Start Menu* under *Settings>Control Panel* or by double-tapping on the desktop *Internet Explorer* icon.

Microsoft WordPad

The *Microsoft WordPad* is a basic word processor used to create, edit, view and print text documents.

Remote Connect

Remote Connect is a NEO application used to connect to a Windows Terminal Server so that you can run a "session" on the Server machine using NEO (Windows CE 5.0 device). "Remote Connect" on page 71 provides a website with details about this option.

Windows Explorer

The *Windows Explorer* installed on your NEO is consistent with all Windows CE 5.0 devices. You can access this option from the *Start Menu* under *Programs> Windows Explorer*.

4.4.4 Shortcuts
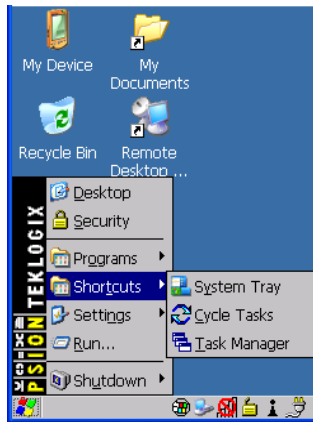
System Tray

If your touchscreen is not enabled, you can use the *System Tray* option to access the icons in the taskbar at the bottom of the screen. The taskbar displays indicators such as a radio signal icon and the security level. These indicators are attached to dialog boxes that provide additional information.

• Choose **Start>Shortcuts>System Tray**.

Using the icons in the taskbar, you can either display the *Control Panel* dialog box associated with an icon, or you can view a "tooltip". A tooltip provides the status of each icon.

• Tap and hold the stylus on an icon to display the icon's tooltip. Double-tap on the icon to open the *Control Panel* dialog box associated with the icon.

On the keyboard:

• Press [FN/BLUE] [.] to display the *Start Menu*.
• Choose **Shortcuts** from the *Start Menu*, and then press the [RIGHT] arrow key to display the sub-menu.
• Choose **System Tray** in the sub-menu.
• Use the arrow keys to highlight the icon in the taskbar about which you'd like more information. As each icon is highlighted, a tooltip is displayed.
• To display the associated *Control Panel* dialog box, press [ENTER].

Cycle Tasks

When *Cycle Tasks* is selected (and the Task Manager is not open), you can cycle through active applications.

To cycle through your active applications:

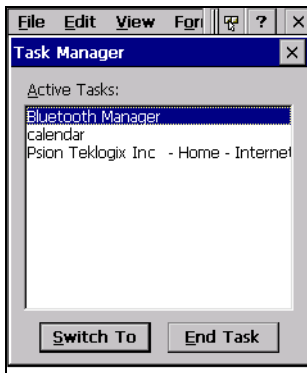• Choose **Shortcuts>Cycle Tasks**, or

Press [ALT] [TAB].

Task Manager

The *Task Manager* allows you to switch to another task or to end an active task. To display the task manager window:

• Tap on **Shortcuts>Task Manager**, or
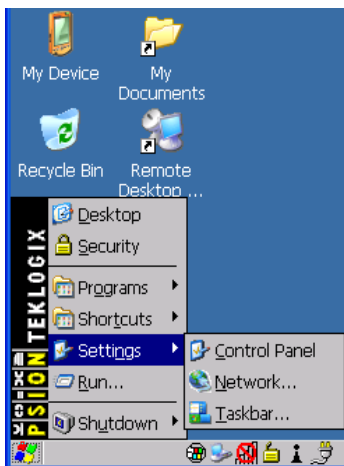
Press [ALT] [ESC].

Figure 4.5 Task Manager

4.4.5 Settings

The *Settings* sub-menu includes the following settings: *Control Panel*, *Network and Dial-up Connections,* and *Taskbar and Start Menu*.

Figure 4.6 Settings Sub-Menu

Control Panel

The *Control Panel* contains applets used to configure hardware, the operating system and the shell. If your NEO is running with the Psion Teklogix TekTerm application or another application, additional configuration applets may appear in the *Control Panel*.

Network And Dial-Up Connections

The *Network and Dial-up Connections* window allows you to configure NEO radio or execute an existing configuration. Refer to "Configuring The 802.11b/g Radio" on page 12 for radio setup details.

Taskbar And Start Menu

The *Taskbar and Start Menu* option displays a dialog box in which you can customize the taskbar, choosing which options will be displayed. Refer to "Customizing The Taskbar" on page 54 for additional details about this option.

4.4.6   Run

Choosing the *Run* option from the *Start Menu* displays a dialog box in which you can enter the name of the program, folder or document you want to open or launch.

Figure 4.7 Run Dialog Box
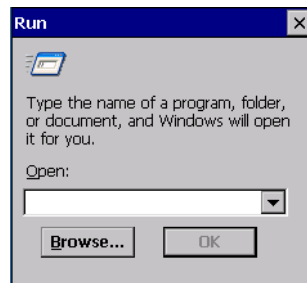
4.4.7   Shutdown

The *Shutdown* menu includes these options: *Suspend* and *Warm Reset*.

Figure 4.8   Shutdown Sub-Menu

*Note: This menu varies slightly depending on the security level chosen. When NEO is set to **User level**, the Shutdown option is replaced by **Suspend**. A sub-menu is not available.*

Suspend

The *Suspend* option suspends NEO immediately. This is equivalent to turning the hand-held off.

Warm Reset

A *Warm Reset* preserves installed drivers and applications along with data that are saved in the object store (Windows CE default file system).

Cold Reset

A *Cold Reset* preserves data and applications that are saved in the Flash file system, called *Flash Disk* on NEO or on a microSD card. This should be used as a last resort if NEO cannot be reset using any other method.

4.5   Using A Dialog Box

A dialog box (like the samples in Figure 4.9 on page 65) appears when you need to make selections and enter further information. You can move between dialog items by tapping on them with your stylus, or by pressing the arrow keys and the [TAB] key ([SHIFT] [TAB] moves the cursor backwards).

Figure 4.9 Dialog Boxes
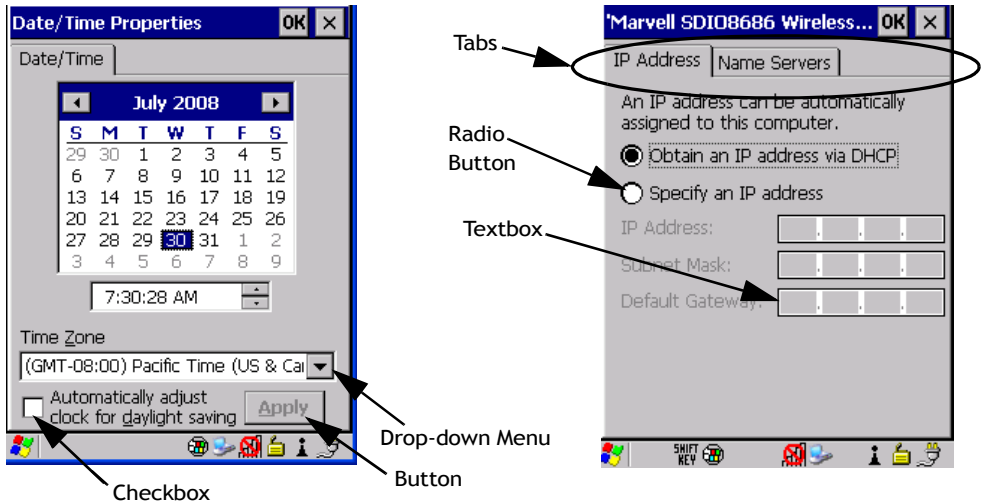
Note: You can use the stylus to tap on an element in a dialog box to select or deselect it, display drop-down menus, save your selections, and so on.

Dialog boxes contain one or more of the following elements:

Tab: A tab separates different elements of a dialog box. Press the [TAB] key until a tab in the dialog box is highlighted. To display adjoining tabs, press the [RIGHT] or [LEFT] arrow key. To display the information in the next tab from anywhere in the window, press [CTRL] [TAB].

Textbox: A textbox requires that you type information. Press the [TAB] key to highlight the textbox and then type the appropriate information.

Drop-down: This type of menu is identified by up and down arrows next to the drop-down menu to indicate that additional options are available. Press the [TAB] key to highlight the menu, and use the arrow keys on your keyboard to cycle through the options.

Checkbox: This box allows you to select or deselect an option. To select or deselect a checkbox, press the [TAB] key to highlight the checkbox, and press the [SPACE] key to select or deselect it.

Radio buttons: These buttons allow you to choose from a number of options. For example, in the sample screen in Figure 4.9 on page 65 you can choose to *Obtain an IP address via DHCP* or *Specify an IP address*. Press the [TAB] key to highlight a radio button option, and then select a radio button by pressing the arrow keys to highlight the appropriate option.

Buttons: This type of button allows you to *Save*, *Delete* and so on the options you've chosen in a dialog box. Use the [TAB] key to highlight the button you want to use. Press the [ENTER] key to activate it.

Saving Your Choices: Once you've made all your changes, press the [ENTER] key to save your changes and exit the window.

Note: A dialog box item that is displayed in grey text indicates that it is not currently available.

CONFIGURATION   5

5.1 Remote Connect

Remote Desktop Connection is a Windows application that allows you to connect to a computer across the Internet using NEO (Windows CE device). Refer to the following website for step-by-step information about setting up this connection:

http://www.microsoft.com/windowsxp/using/mobility/getstarted/remoteintro.mspx

or contact Psion Teklogix support services. (Refer to the *NEO Regulatory & Warranty Guide*, PN 8000175, or locate the office closest to you at *www.psionteklogix.com*).

5.2 The TekTerm Application

TekTerm is a powerful emulation application ideally suited for real time data transaction applications associated with mainframes and servers. NEO includes unique features that support TekTerm—a Psion Teklogix application that has the ability to maintain multiple simultaneous sessions with a variety of host computers. For detailed information, please refer to the *TekTerm Software User Manual*, PN 8000073.

5.3 The Control Panel

The Windows CE 5.0 *Control Panel* provides a group of icons through which you can set a variety of system-wide properties, such as mouse sensitivity, network configuration and the desktop color scheme.

Note: If you are uncertain how to move around a dialog box and make selections, review "Using A Dialog Box" on page 64.

When NEO boots up, the startup desktop (shell) is displayed, and any applications stored in the *Startup* folder start up immediately.

To access the *Control Panel*:

• Tap on **Start>Settings>Control Panel**.

If you're using the keyboard:

• Press **[FN/BLUE] [.]** to display the *Start Menu*.
• Highlight **Settings** in *Start Menu*, and press the [RIGHT] arrow key to highlight the *Control Panel*.
• Press the **[ENTER]** key.

The *Control Panel* folder contains icons used in the setup of your NEO.

Figure 5.1 Control Panel
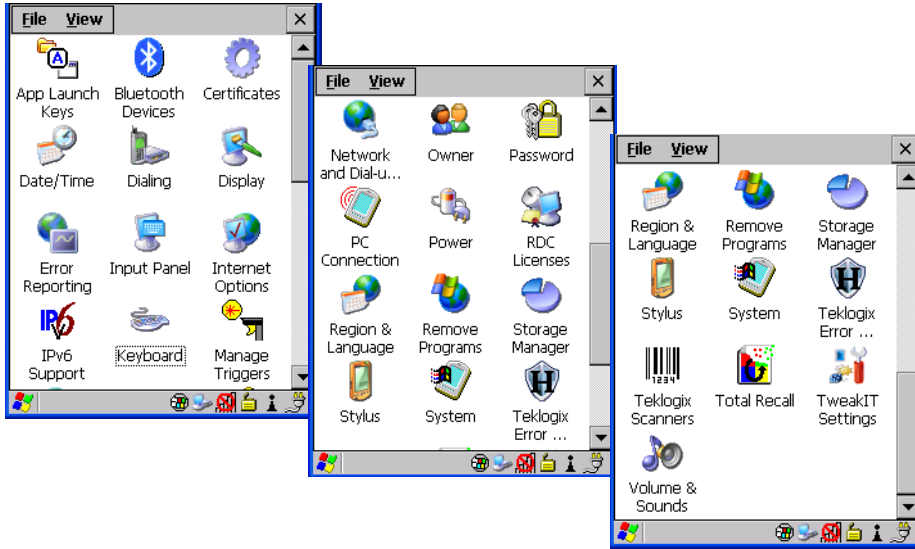
5.4   Control Panel Icons

The *Control Panel* provides a group of icons that allow you to customize and adjust settings on your NEO.

App Launch Keys

By mapping keys to applications using this program, you can then launch those applications from a single key-press.

Bluetooth Devices

Provides the tools to manage device pairing and configuration.

Certificates

A public key is transmitted as part of a certificate. The certificate assigned through this icon is used to ensure that the submitted public key is, in fact, the public key that belongs to the submitter. The client checks that the certificate has been digitally signed by a certification authority that the client explicitly trusts. "Certificate Assignment" on page 101 directs you to the appropriate setup information.

Date/Time

Allows you to set the current Month, Date, Time and Time Zone on your unit.

Dialing

Specifies dialing settings, including area code, country code, dial type and the code to disable call waiting. You can store multiple patterns—for example, 'Work', 'Home', and so on using this dialog box.

Display

Changes the appearance (window colour scheme) on the unit desktop.

Error Reporting

Error Reporting allows you to enable or disable Microsoft error reporting prompts.

Input Panel

Provides the framework for a Soft Input Panel (SIP) should you need to design your own SIP, or change some soft keyboard options.

Internet Options

Provides options to configure your Internet browser. You can determine items such as the default and search page that the browser applies when connecting to the Internet, the cache size, the Internet connection options, and the security level that is applied when browsing.

IPv6 Support

Refers to a new Internet Protocol specification (version 6) that has been published to use 128-bit IP addresses (replacing version 4).

Keyboard

Toggles character repeat on and off and specifies delay and rate for repeated characters. This applet also allows you to adjust the keyboard backlight threshold and intensity, define *One-Shot Mode*, remap keys using *Scancode Remap* and program *Macro Keys*.

Manage Triggers

Allows multiple-scanner trigger management, including the ability to configure each of the trigger buttons. You can configure the trigger ID for each trigger button for both single- and double-click, and the double-click time.

Network And Dial-up Connections

Network and Dial-u...

Displays a network window from which NEO 802.11g radio can be configured and an existing configuration can be executed. Refer to "Configuring The 802.11b/g Radio" on page 12 for details.

Owner

Owner

Provides fields in which you can specify owner information. A *Notes* tab allows additional information to be entered and displayed when the unit is powered up. *Network ID* tab information is used to access network resources. (This information should be provided by your System Administrator.)

Password

Password

Allows you to assign a password to restrict access to elements of the unit. Once assigned, password access cannot be circumvented so it is important that you write down your password and keep it in a safe place. Refer to "Security Settings" on page 57 for details.

PC Connection

PC Connection

Enables direct connections to a desktop computer. Selecting the *Change Connection* button allows you to change the type of direct connect to your PC.

Power

Power

Displays battery pack power status. (Alternately, battery status can be accessed through the taskbar.) Additional tabs allow you to determine suspend states, specify a suspend threshold and, when seated in either the Combo Dock or Quad Dock, determine whether or not a battery that requires it can be recalibrated. This dialog box also allows you to activate card slots and built-in devices. (Refer to "Devices" on page 95 for details.)

RDC Licenses

RDC Licenses

The Terminal Services license server stores all license tokens that have been installed for a group of terminal servers and tracks licenses issued. The Remote Desktop Licenses (RDC) application displays license 'tokens' for devices that connect to a Terminal Server. Note that this option is not available for units equipped with Windows CE 5.0 Core.

Region & Language

Region & Language

Allows you to specify the local language that is to be displayed on the hand-held screen along with the format of numbers, currency, time and date for your region.

Remove Programs

Lists the programs that can be removed from your unit. To remove a program, select it and then click on the **Remove** button.

Storage Manager

Allows the user to view information about the storage devices that are present, such as SD-MMC flash cards. For details, see page 122.

Stylus

Adjusts how Windows CE 5.0 recognizes your double-tap (as slow or rapid successive taps). In the *Calibration* tab, you can recalibrate your touchscreen by tapping on the **Recalibrate** button and following the directions on the screen.

System

Displays system and memory properties. In the *Memory* tab, you can allocate memory between storage memory and program memory.

Teklogix Error Handling Service

Teklogix Error Handling Service is an error diagnostic tool.

Teklogix Scanners

Provides scanner parameters and the bar code symbologies that NEO scanner will successfully read.

Total Recall

Provides access to a backup and restore utility to maintain applications and settings over cold reboots.

TweakIT Settings

Allows you to change Advanced System Settings (interface, network, and servers), User System Settings (display font size), and provides the Registry Editor.

Volume & Sounds

Allows you to adjust the volume of the sound emitted to indicate events like warnings, key clicks and screen taps.

5.5   Basic Setup

5.5.1   Display Properties

•   In the *Control Panel*, choose the **Display** icon.

Figure 5.2   Display Icon
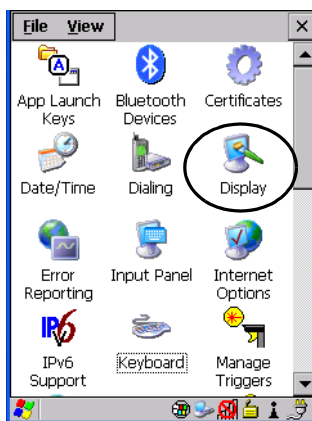
5.5.1.1   Display Backlight

The backlight is activated for a configurable amount of time when NEO is in use (key press, scanner trigger, or data received from the host). The *Display Properties* dialog box in the *Control Panel* allows you to specify the intensity of the backlight along with how long the display will maintain the specified intensity.

Note: Keep in mind that this option may be restricted to supervisory use only.

• In the *Display Properties* dialog box, open the **Backlight** tab.

Note: Backlight changes take effect immediately. You do not need to reset the unit.

To maximize battery run time, keep the display backlight brightness and active durations as low as possible.

Intensity

This parameter is used to adjust the light intensity of the backlight. Sliding the bar to the left lowers the light intensity, and sliding it to the right raises the intensity. You can also ad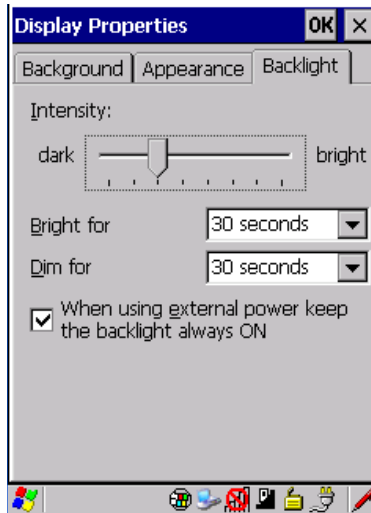just the backlight directly from the keyboard by pressing [FN/BLUE] followed by the [LEFT] or [RIGHT] arrow keys to increase or decrease the backlight intensity.

Bright For

The value chosen from this drop-down menu determines the duration of time that the backlight stays on at the configured intensity after the last user action (keypress, scan trigger).

Dim For

The value chosen from this drop-down menu determines the duration of time that the backlight stays on at half the configured intensity (dimmed backlight) after expiration of the *Bright For* delay and as long as no user action takes place (such as a keypress or scan trigger). At the expiration of the *Dim For* duration, the display backlight shuts off.

External Power Checkbox

When you select the checkbox next to *When using external power keep the backlight always ON*, the backlight remains on at the configured intensity when NEO is operating with external power (not battery power). If NEO is drawing power from its battery, this option is ignored and the other parameters defined in *Display Properties* dialog box are used.

5.5.1.2 Display Appearance

• In the *Display Properties* dialog box, open the **Appearance** tab.
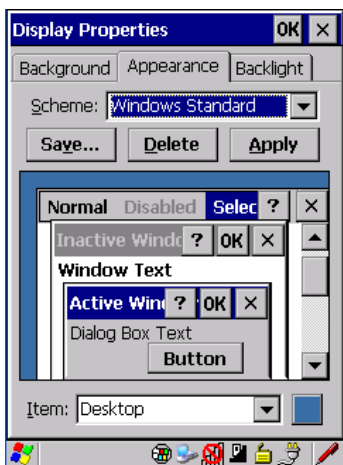
This dialog box allows you to customize the display colour scheme.

5.5.2 Keyboard Properties

This icon displays the *Keyboard Properties* dialog box in which you can adjust the repeat rate of the keys, the intensity of the keyboard backlight and the behaviour of the [FN/BLUE] and [FN/ORANGE] modifier keys. This dialog box also allows you to define macro keys and Unicode characters.

• In the *Start Menu*, choose **Settings>Control Panel>Keyboard icon.**

Figure 5.3 Keyboard Icon
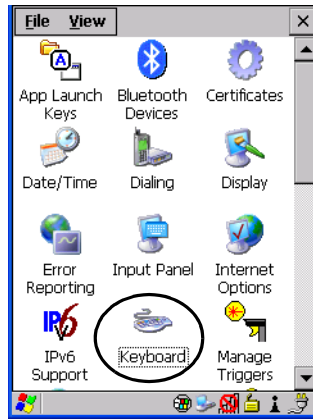
5.5.2.1 Key Repeat

Note: These settings apply when a key is held down continuously.

• In the *Keyboard Properties* dialog box, open the **Repeat**tab.

Repeat Delay

The value assigned for this parameter determines the delay between repeat characters. Sliding the *Repeat Delay* bar to the left increases the delay between key repeats, and sliding the bar to the right shortens the repeat delay time.

Repeat Rate

The value assigned for the *Repeat Rate* parameter determines how quickly the key you press repeats. Sliding the bar to the left slows the repeat rate, and sliding the bar to the right increases the repeat rate.
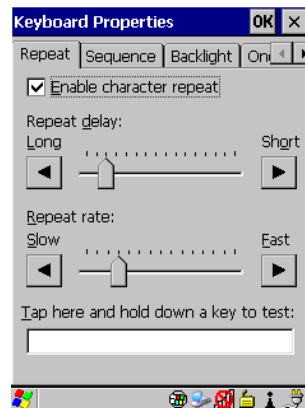
Note: Use the field at the bottom of this dialog box to test the repeat delay and rate settings you've chosen.

5.5.2.2 Sequence
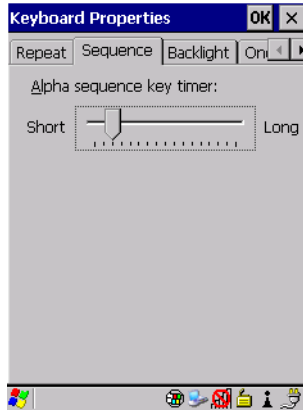
This tab determines the allowable pause between alpha key presses on a numeric keyboard. For example, suppose you want to type the letter 'c' – you would need to press the [2] key *three* times. With the [ORANGE] key locked 'on', if you press [2] twice and then pause between key presses for 1 second, the letter 'b' will be selected automatically. Moving the *Sequence* slider to the right increases the pause time between alpha key presses.

5.5.2.3 Keyboard Backlight

- In the *Keyboard Properties* dialog box, open the **Backlight** tab.
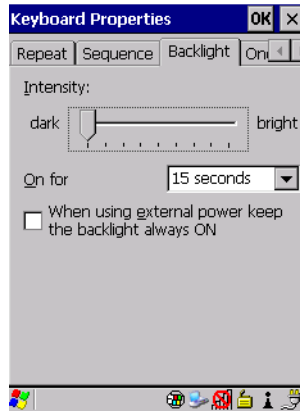
Intensity

This parameter is used to adjust the light intensity of the keyboard backlight. Sliding the bar to the left darkens the keyboard backlight intensity, and sliding it to the right lightens the intensity.

ON For

The value chosen from this drop-down menu determines the duration of time that the keyboard backlight stays on when a unit is not in use.

Note: Tapping in the checkbox next to **'When using external power, keep the backlight always ON'** *forces the keyboard backlight to remain on when the unit is operating with external power.*

Note: To maximize battery run time, keep the backlight intensity at the lowest possible setting.

5.5.2.4 Keyboard One Shot Modes

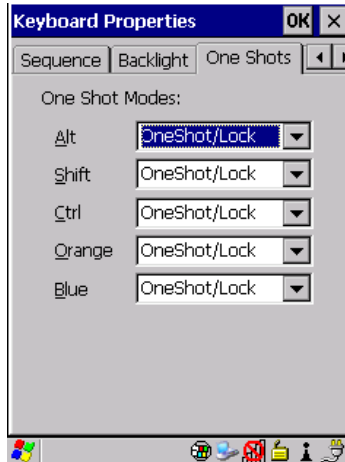- In the *Keyboard Properties* dialog box, open the **One Shots** tab.

The options in this tab allow you to determine how modifier keys on your NEO behave. For each modifier key—[ALT], [SHIFT], [CTRL], [FN/ORANGE] and [FN/BLUE] – you have the following options in the drop-down menu: *Lock*, *OneShot*, and *OneShot/Lock*.

*Note: Keep in mind that checking the taskbar lets you know whether or not these keys are locked on. For example, if the [FN/ORANGE] key is locked 'on', the taskbar at the bottom of the screen displays it in uppercase characters, **ORANGE KEY.** If this key is displayed in lowercase characters in the taskbar, you'll know that the **orange key** is not locked. It will become inactive following a key press.*

Important: *Once you've assigned a One Shot mode to a modifier key, you need to tap on the OK button at the top of the tab to activate your selection.*

Lock

If you choose *Lock* from the drop-down menu, pressing a modifier key once locks it 'on' until you press the modifier key a second time to unlock or turn it off.

OneShot

If you choose *OneShot*, the modifier key remains active only until the next key is pressed.

OneShot/Lock

OneShot/Lock allows you to combine these functions. When you choose this option and you press the modifier key once, it remains active only until the next key is pressed.

If you press the modifier key twice, it is locked 'on', remaining active until the modifier key is pressed a third time to turn it 'off'.

5.5.2.5 Keyboard Macro Keys

While macro keys are not physically stamped on the keyboard, up to 12 macro functions can be added using the *Scancode Remapping* function. Refer to "Scancode Remapping" on page 86 for details about mapping keys.

- In the *Keyboard Properties* dialog box, open the **Macros** tab.
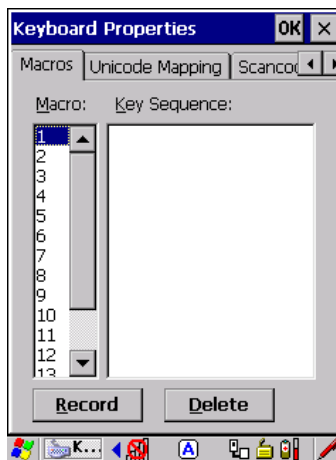
A macro has 200 programmable characters (or "positions"). The macro keys can be programmed to replace frequently used keystrokes, along with the function of executable keys including [ENTER], [BKSP] and [DEL] ([FN/BLUE]-[BKSP]), function keys and arrow keys.

Recording And Saving A Macro

On the *26-key* NEO, you can program a maximum of 15 macro keys.

- In the *Macro* menu highlight a macro key number, for example macro 1, to assign a macro to macro key [M1]. Choose the **Record** button.

A message screen is displayed instructing you to *Enter Key Strokes to Record*

- Type the macro sequence you want to assign to the Macro key. You can type text and numbers, and you can program the function of special keys into a macro.
- When you've finished recording your macro sequence, press the key sequence: [CTRL] [ALT] [ENTER], or choose the **Stop Recording** button.

A new screen called 'Verify Macro' displays the macro sequence you created. The *Save* button is highlighted.

- Press [ENTER] to save your macro, or highlight CANCEL and press [ENTER] to discard it.

Executing A Macro

To execute a macro:

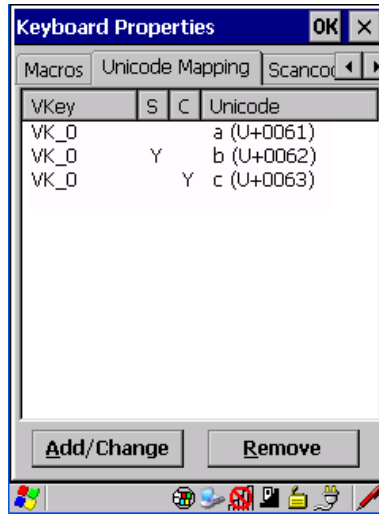- Press the macro key to which you've assigned the macro.

Deleting A Macro

To delete a macro:

- In the *Macros* tab, highlight the **macro number** you want to delete.
- Choose the **Delete** button.

5.5.2.6   Unicode Mapping

• In the *Keyboard Properties* dialog box, open the **Unicode Mapping** tab.

The *Unicode Mapping* tab is used to map combinations of virtual key values and [CTRL] and [SHIFT] states to Unicode™ values. This tab shows the configured Unicode character along with the Unicode value. For example, the sample screen above shows "a (U+0061)" indicating that the character "a" is represented by the Unicode value "0061", and so on. Keep in mind that Unicode configurations are represented as hexadecimal rather than decimal values.

All user-defined Unicode mappings are listed in the *Unicode Mapping* tab in order of virtual key value, and then by order of the shift state. If a Unicode mapping is not listed, the Unicode mapping is mapped to the default Unicode value.
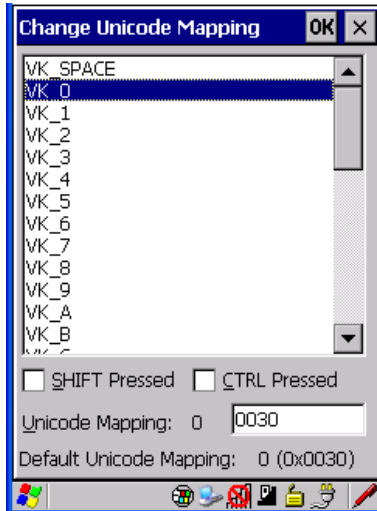
Adding And Changing Unicode Values

Important: Changes to Unicode mappings are not saved until you exit the Keyboard Properties dialog box.

• Choose the **Add/Change** button

Figure 5.4 Adding And Changing Unicode Values

- Highlight a value in the Unicode mapping list. In the sample screen above, a value will be assigned to virtual key 0 (VK 0).

- Position the cursor in the *Unicode Mapping* field, and type a **Unicode value** for the highlighted key.

Note: To add a shifted state, [SHIFT] and/or [CTRL], press [TAB] to position the cursor in the checkbox next to 'SHIFT Pressed' and/or 'CTRL Pressed'. Press [SPACE] to select the shift state you want to assign.

Removing Unicode Values

- In the *Unicode Mapping* tab, highlight the item you want to delete, and choose the **Remove** button.

5.5.2.7 Scancode Remapping

A scancode is a number that is associated with a physical key on a keyboard. Every key has a unique scancode that is mapped to a virtual key, a function or a macro. *Scancode Remapping* allows you to change the functionality of any key on the keyboard. A key can be remapped to send a virtual key (e.g. VK_F represents the 'F' key; VK_RETURN represents the [ENTER] key, etc.), perform a function (e.g. turn the scanner on, change volume/contrast, etc.) or run a macro.

There are three different tables of scancode mappings: the *Normal* table, the *Blue* table and the *Orange* table. The *Normal* table defines unmodified key presses; the *Blue* table defines

key presses that occur when the [FN/BLUE] modifier is on; the *Orange* table defines key presses that occur when the [FN/ORANGE] modifier is on. The default mappings of these scancodes can be overwritten for each of these three tables using the *Scancode Remapping* tab accessed from the *Keyboard Properties* dialog box.
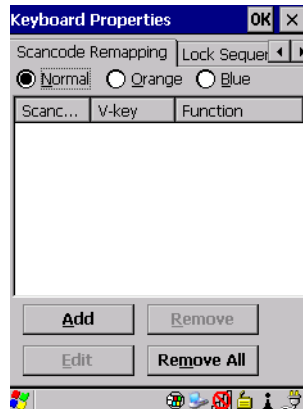
The first column in the *Scancode Remapping* tab displays the scancodes in hexadecimal. If the scancode is remapped to a virtual key, that virtual key is displayed in the next column labelled 'V-Key'. A virtual key that is 'Shifted' or 'Unshifted' is displayed in the third column labelled 'Function'.
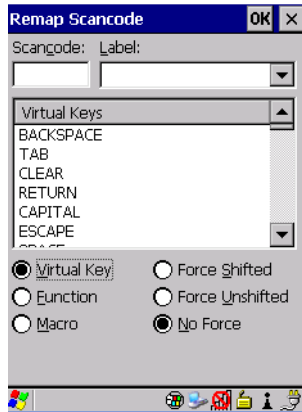
If the scancode is remapped to a function or a macro, the first and second columns remain blank while the third column contains the function name or macro key number (e.g., Macro 2).

Adding A Remap

To add a new remapping:

• Choose the **Add** button at the bottom of the dialog box.

The *Remap Scancode* dialog box is displayed.

- Type the scan code in hexadecimal in the field labelled *Scancode*

Note: The Label field displays the default function of the scancode you are remapping.

Virtual Key, Function And Macro

The radio buttons at the bottom of the dialog box allow you to define to what the scan code will be remapped: *Virtual Key*, *Function* or *Macro*.

When *Virtual Key* is selected, you can choose to force [SHIFT] to be *on* or *off* when the virtual key is sent. If *No Force* is selected, the shift state is dependent on whether the shift state is on or off at the time the virtual key is sent.

When *Function* is selected, a list of valid functions appears in the dialog box.

When *Macro* is selected, the macro keys available on your unit are listed in the dialog box.

- Choose **Virtual Key**, **Function** or **Macro**.
- Choose a function from the *Function* list in the dialog box, and tap on **OK**.

Editing A Scancode Remap

To edit a scancode:

- In the *Scancode Remapping* tab, tap the stylus on the remap you want to edit.
- Tap on the **Edit** button, and make the appropriate changes.
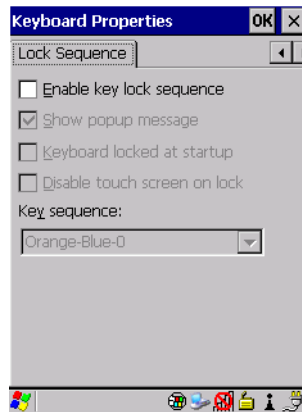- Tap on **OK** to save your changes.

Removing A Remap

To delete a remap:

• In the *Scancode Remapping* tab, highlight the scancode you want to delete, and tap on the **Remove** button.

• Tap on **OK**.

5.5.2.8 Lock Sequence

The *Lock Sequence* tab allows you to lock the keyboard to prevent keys from being pressed accidentally when, for example, the unit is inserted in a holster.

• To lock the keyboard, tap in the checkbox next to *Enable key lock sequence*.

• Tap in the checkbox next to *Keyboard locked at startup*.

• In the *Key sequence* dropdown menu, choose the key sequence you will need to type to unlock the keyboard.

Note: It is useful to leave the 'Show popup message' enabled (default) so that anyone attempting to use the hand-held keyboard will see the key sequence they will need to enter to unlock the keyboard displayed on the screen.

A *locked keyboard* icon is displayed in the softkey bar when the keyboard is locked.

Locked Keyboard
Icon
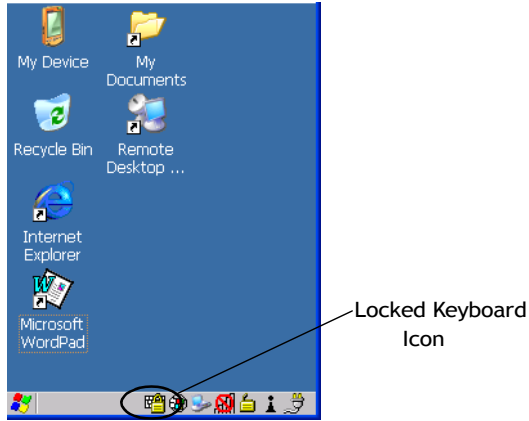
- Type the key sequence to unlock the keyboard.

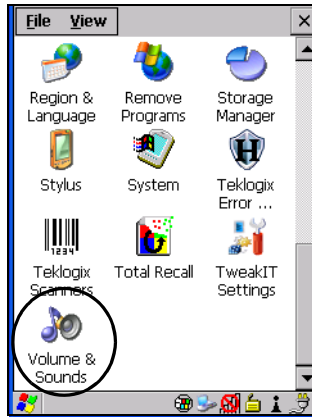## 5.5.3 Volume And Sound Properties

- In the *Control Panel*, choose the **Volume & Sounds** icon.

Figure 5.5 Volume Icon

5.5.3.1 Volume Adjustments
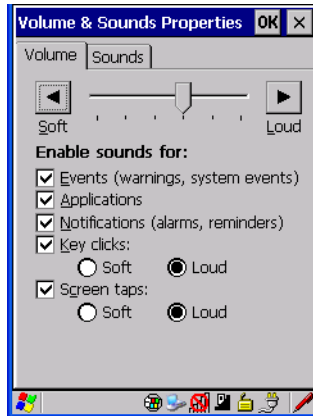
• Slide the volume button to the left to lower the receiver and beeper volume or to the right to increase the receiver and beeper volume.

• Under the heading *Enable sounds for*, enable the conditions under which you want NEO to play a sound.

Keep in mind that adjusting this slider modifies the beeper *and* the receiver volume.

Note: You can also adjust volume directly from the keyboard. Refer to "Audio Indicators" on page 37 for details.

5.5.3.2 Sound Adjustments
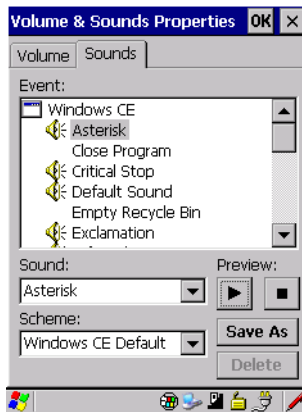
This dialogue box allows you to assign sounds to identify a particular actions. For example, you can choose the sound your hand-held will emit when you close a program.

5.5.4   Power Properties

This icon displays a *Power Properties* dialog box that indicates the battery capacity and allows you to manage battery use.

•   In the *Control Panel*, choose the **Power** icon.

Figure 5.6 Power Icon

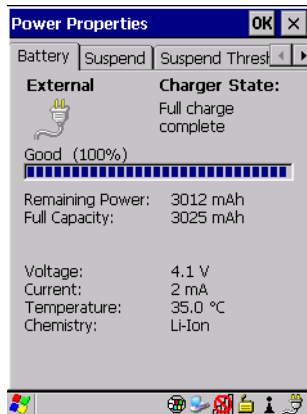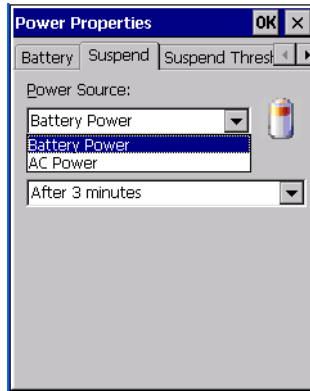#### 5.5.4.1   Battery Capacity

•   In the *Power Properties* dialog box, open the **Battery** tab to view battery details.

5.5.4.2 Power Saving Suspend

- In the *Power Properties* dialog box, open the **Suspend** tab.

Power Source

This dialog box allows you to specify the suspend time for either *AC Power* or
Battery Power.

Suspend Timeout

> ⚠️ *Important: Psion Teklogix recommends setting the Suspend value to 10 minutes. To
> further reduce power consumption, carefully consider the duration of time
> that the display and the keyboard backlight are 'on' (see "Display Back-
> light" on page 76 and "Keyboard Backlight" on page 81).*

When NEO is idle – not receiving any user input (a key touch, a scan and so on) or system
activity (serial data, an activity initiated by an application and so on) – the hand-held uses
the value assigned in the *Suspend Timeout* field to determine when the unit will go to sleep
(appear to be off).

When the time in the *Suspend Timeout* field elapses without any activity, the unit enters
suspend state. In suspend state, the hand-held CPU enters a sleep state, and the radio is shut
off. The state of the device (RAM contents) is preserved. Pressing [ENTER] wakes the
system from suspend state. When NEO is in suspend state, the network connection will not
be broken immediately. If the connection is dropped, you must re-establish the network
connection.

5.5.4.3 Suspend Threshold
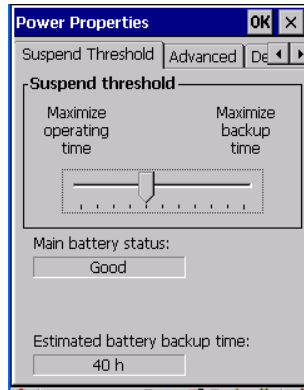
The *Suspend Threshold* lets you to determine when NEO will shut down. If the slider is left at the default value, *Maximum Operating Time*, the hand-held will run until the battery is completely empty; the RAM is only backed up for a short period of time. If you choose *Maximum Backup Time*, the hand-held will shut off with more energy left in the battery so RAM can be backed up for a longer period of time.

> ⚠️ *Important: Selecting 'Maximum backup time' reserves approximately 20% of the battery capacity for memory backup. Once the battery is drained, the system RAM memory is lost and the unit must reboot.*
>
> *In most real-time transaction environments, this is not a problem (it only takes a few seconds to boot). However, batch transaction environments, where data is not saved to a non-volatile memory (a microSD FLASH card), may need to pay particular attention to this parameter. Psion Teklogix does not recommend the storage of any valuable data in system RAM.*
>
> *The NEO Windows CE 5.0 environment does not store any critical data in RAM (such as the registry or file system).*
>
> *If the user's application does not save data to RAM, Psion Teklogix recommends keeping the Suspend Threshold setting as low as possible to maximize battery run time.*

5.5.4.4 Advanced
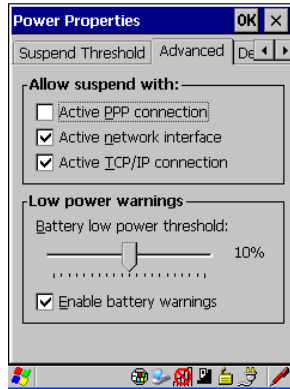
Allow Suspend With:

This tab allows you to specify whether or not your unit will enter *Suspend* state while it is operating with an active PPP connection, network interface or active TCP/IP connection.

Low Power Warnings

The sliding scale at the bottom of this tab allows you to specify the remaining battery capacity at which a warning message is displayed on the screen, from 0% to 20%.

5.5.4.5 Devices

This tab controls power to individual SDIO slot, and built-in devices. Enable or disable the checkboxes as needed, then tap on **OK** to save your changes.
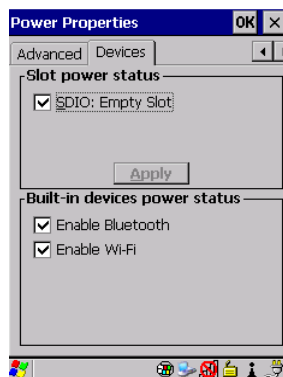
5.5.5   Stylus Properties

- In the *Control Panel*, choose the **Stylus** icon.

Figure 5.7   Stylus Icon

5.5.5.1   Double-Tap

- In the *Double-Tap* tab, follow the directions to tailor the sensitivity of the stylus when you tap on the touchscreen.
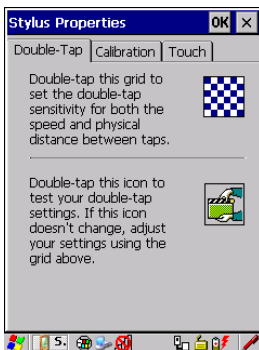
5.5.5.2   Calibration

Touchscreens rarely require recalibration. However, if your touchscreen has never been calibrated or if you find that the stylus pointer is not accurate when you tap on an item, follow the directions below.

• Choose the **Calibration** tab, and then tap on the **Recalibrate** button.

• Follow the directions in the *Calibration* tab to recalibrate the screen.

5.5.5.3 Touch

This tab allows you to disable the touchscreen.

• Choose the **Touch** tab. Tap the checkbox next to *Disable the touch panel*.

To enable a disabled touchscreen:

• Press the following keys – **[TAB] [SPACE] [ENTER]**.
• The *Touch* tab is displayed. Press the **[SPACE]** key to uncheck the box and enable touchscreen operations.

*Note: Refer to "Navigating Using The Keyboard" on page 49 for details about navigating without a touchscreen.*

5.5.6 Manage Triggers

This option allows you to configure how bar code scanners and other devices are triggered. You can configure the trigger ID for each trigger button for both single- and double-click, and the double-click time.

• In the *Control Panel*, choose the Manage **Triggers** icon.

Figure 5.8 Manage Triggers Icon
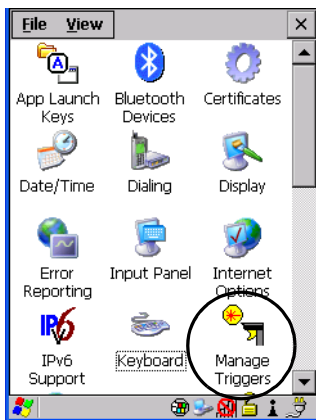
- In the *Manage Triggers* screen you'll see a list of trigger mappings.
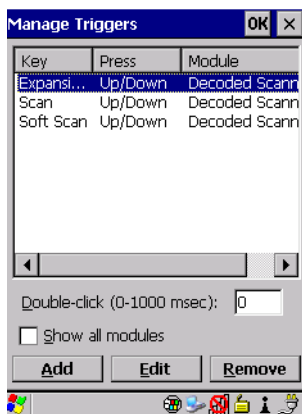
5.5.6.1 Trigger Mappings

A 'trigger mapping' is an association between a particular key on the keyboard and a driver or application (the module). Along with keyboard keys, trigger sources can also be grip triggers, external hardware triggers or software-based. When the specified key is pressed, the trigger consumer (for example, a decoded scanner) is sent a message.

> ⚠️ ***Important:*** ***It is not possible to have two or more identical mappings—for example [F1] cannot be mapped to the Non-Decoded Scanner twice—even if the trigger type is different.***
>
> ***A keyboard key that is used as a trigger source will no longer generate key data or perform its normal function. For example, if the space button is used as a trigger source, it will not be able to send space characters to applications.***

Double-Click

When a key is pressed and released, then pressed again within the configured time (between 0 to 1000 milliseconds), a double-click occurs. See also "Trigger-Press Type" on page 101.

Show All Modules

By default, the trigger mapping list only shows active mappings. Mappings for drivers or applications that are not currently active are not normally displayed. By checking this checkbox, all mappings, both active and inactive, are displayed.

Add

Tapping this button brings up the *Add Mapping* dialog (see "Add And Edit Trigger Mapping" on page 100), so that you can add new trigger mappings.

Edit

Tapping this button brings up the *Edit Mapping* dialog (see "Add And Edit Trigger Mapping" on page 100), so that you can edit existing trigger mappings.
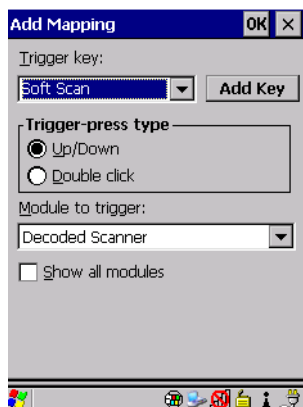
Remove

Tapping this button removes an existing mapping.

OK

The *OK* button in the top right of the *Manage Triggers* screen saves all changes made. If the cancel button X is tapped instead, or the [ESC] key is pressed, all changes will be discarded.

5.5.6.2   Add And Edit Trigger Mapping

These dialogs allow the user to add and edit trigger mappings.

Trigger Key

This drop-down list allows you to specify the source of the trigger events, such as the *Expansion port trigger*, *Soft Scan* and *Scan* for the trigger module selected.

Note: It is possible to map the same source to different modules (trigger consumers) – for example, to both the Imager and Non-Decoded Scanner. If so, both devices/operations will occur simultaneously. This is not recommended in most cases, especially with devices such as Imagers.

It is also possible to map different sources to the same module (trigger consumer).

Add Key

Only existing trigger sources are shown in the Source combo-box. To add a new source to this list, tap on the **Add Key** button. A dialog will pop up and allow you to select the keyboard key to use as a trigger source.

Trigger-Press Type

You can enable either an *Up/Down* or *Double Click* response to a trigger press. Normally, when a trigger (keyboard key, etc.) is pressed and released, a "trigger down" event is sent to the "owner"– that is, the application receiving the trigger press information—followed by a "trigger up". If *Double Click* is chosen in this menu, when the trigger is pressed, released, and then pressed again, a "double-click" event will have occurred. If a mapping with the type *Up/Down* has also been configured for the same source, it will only receive the first set of trigger events.

Module Trigger

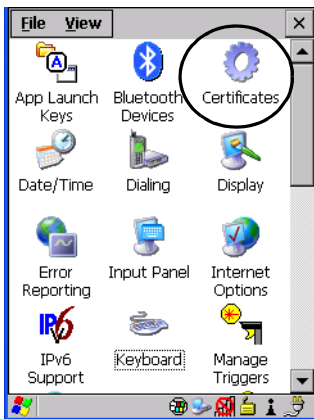This identifies the driver or application receiving the trigger presses.

Show All Modules

By default, inactive owners are not shown. By checking this checkbox, all owners, both active and inactive, are displayed.
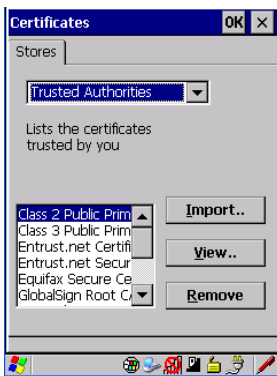
5.5.7 Certificate Assignment

- In the *Control Panel*, choose the **Certificate** icon.

Figure 5.9 Certificates Icon

This option is used in conjunction with 802.1x authentication to enhance NEO security.

For a detailed description about Certificate setup for both the server and client-side devices (NEO hand-helds), refer to the following website:

http://www.microsoft.com/windowsserver2003/techinfo/overview/security.mspx

Note: When importing certificates, NEO only recognizes .cer files.

5.6 *Bluetooth* Setup

Bluetooth is a global standard for wireless connectivity for digital devices and is intended for Personal Area Networks (PAN). The technology is based on a short-range radio link that operates in the ISM band at 2.4 GHz. When two *Bluetooth*-equipped devices come within a

10 meter range of each other, they can establish a connection. Because *Bluetooth* utilizes a radio-based link, it does not require a line-of-sight connection in order to communicate.

Note: The **Bluetooth** *radio uses an internal antenna.*

The *Bluetooth* radio is disabled by default. Before you begin the setup process:

• Under *Settings>Control Panel*, tap on the **Power** icon.

• Tap on the **Devices** tab, and tap in the checkbox next to *Enable Bluetooth*. Tap on **OK**.

When the radio is enabled, a *Bluetooth* icon appears the taskbar at the bottom of the screen. It is ready for setup.

• Tap on **Settings>Control Panel>***Bluetooth* icon.

Figure 5.10 *Bluetooth* Icon
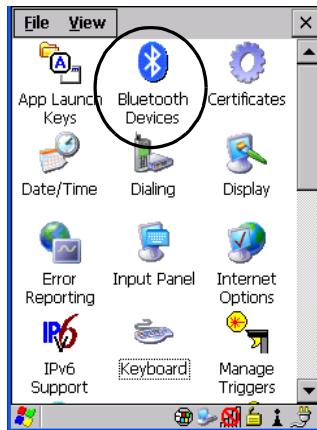
The *Bluetooth Manager* dialog box displays the other *Bluetooth* devices with which you can communicate.

5.6.1   The Devices Tab
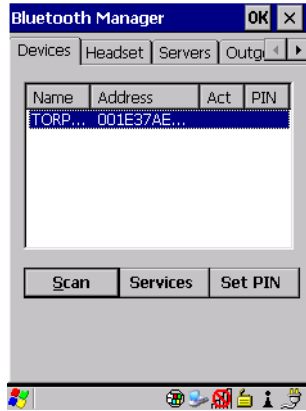
This tab allows you to scan for other *Bluetooth* enabled devices, and it allows you to pair devices.

If you intend to pair devices (a headset, for example), power on and bring the devices within 5 m (16.4 ft.) of each other before proceeding with the discovery process described below.

5.6.1.1   Pairing A Device

To pair devices:

- Follow the manufacturer's instructions to place the device you want to pair in pairing mode
- Choose the *Devices* tab and **Scan** for devices in your area.
- When the scan is complete, highlight the device you want to pair with and either double-click or press the **Services** button.
- If a PIN dialog box appears, type your PIN and tap on **OK**.

After entering the device PIN number, the *Services* dialog appears with a list of services available on that device.

- To select a service, double-click on the service you want, or highlight the service and press the space bar.
- In the drop-down list of options available, choose **Active** to pair the device.

A COM/BSP port name will appear next to the service for this device. Your device is now paired.

Scan

• Click on the **Scan** button to list available devices.

Figure 5.11 Available *Bluetooth* Devices
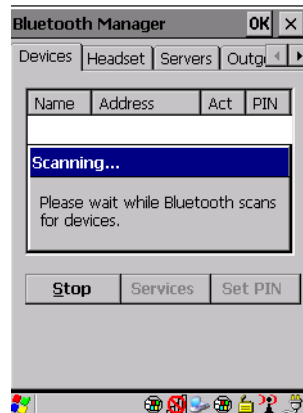
Wait for NEO to complete its scan (approximately 20 seconds). When scanning starts, the *Scan* button will change to *Stop*—if necessary, you can tap on this button to stop the process. Once scanning is complete, all discovered devices will be displayed in the list box, with *Name, Address, Active* status, and *PIN* information.

*Note: During the scanning process, addresses are located first, followed by names. Only the names of devices that are within the **Bluetooth** radio coverage range will be retrieved.*

The *Active* column indicates whether any service is activated for that device. When a service is activated, the device is displayed in the list even when it is not detected during the scan.

The *PIN* column indicates whether you have a PIN (password) set for the device.

At this point you can either query for services or set the PIN for each device. Once you highlight a device in the list box, both the Services and Set PIN buttons become available.

Services

A discovered device may display several service profiles that it can use to communicate, and you will want to activate the type you need. Supported profiles that can be activated include: *DUN* (Dial-Up Networking service), *Printer* (serial service), *Headset service* and *LANPPP* (LANAccessUsingPPP service). *ASync* (ActiveSync) is another available profile.

• To start the service scan, highlight a device in the *Devices* tab list, and then click on the **Services** button or double-click on the device entry.

Note: If the remote device is out of reach or turned off, it can take a considerable amount of time for the Services dialog box to appear—it may appear to be frozen.

Once the device's service profiles are displayed in the *Services* list box:

• Highlight the service to be activated.

• Press [SPACE] or right-click to display the *Activation* menu.

The *Activation* menu contains four options: *Activate*, *Authenticate*, *Outgoing*, and *Encrypt*.

Once the service is successfully activated, the assigned port (if applicable) will appear in the *Port* column of the Services list box. You can choose to use *BSP* or *COM* as the port name. BSP is the latest Microsoft *Bluetooth* stack standard, but older applications assume serial ports are COM. When using COM as the port name, the *Bluetooth* manager will try to find and use a free port between COM7 and COM9. When using BSP as the port name, BSP2 to BSP9 are available for use. The port is available as soon as it is activated.

*Note: The **CH** column shows the RFCOMM channel of the service **if** the service is RFCOMM-based. This information is not generally needed except for debugging purposes.*

To add a service to the *Outgoing* port, an active service must first be deactivated. Then you can choose the **Outgoing** option from the *Activation* menu (highlight a service, right-click or press the [SPACE] bar to display the Activation menu).

The *Authentication* and *Encryption* options can be changed only before activation. To change these after activation, deactivate the service first, then change the options.

Once a service is activated, all the information regarding the service, including the RFCOMM channel number, is saved in the registry. (Some remote devices may change their RFCOMM channel numbers when they reboot, so your saved setting may not work when the remote device is rebooted. In that case, you must deactivate the service and reactivate it to detect the current RFCOMM channel.)

Set PIN

PINs can be set for each device by pressing the **Set PIN** button in the *Devices* tab, or you can skip this step and try to connect to the device first.

Important: The remote device must have authentication enabled, otherwise the PIN authentication will fail.

• Highlight a device, click on the **Set Pin** button, and type the PIN.

You will receive a message, either that the PIN has been successfully validated or that it has been rejected.

If the PIN has been validated, an asterisk (*) appears in the PIN column in the *Devices* list box, indicating that this device has a PIN set. Once a PIN is entered, it is saved in the registry.
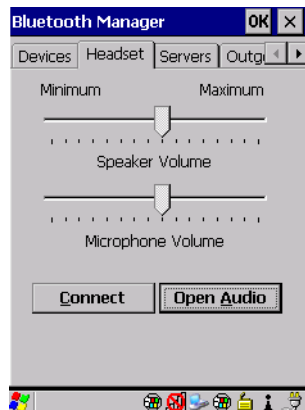
To remove the PIN:

• Choose **Set PIN**, and press [ENTER].

If NEO attempts to connect to a remote device that has Authentication enabled and does not have a required PIN set, an *Authentication Request* dialog box appears.

• Enter the PIN, and tap on **OK** to connect the devices.

5.6.2 Headset

The *Headset* connection is initiated from this menu, and the headset speaker and microphone volumes can be adjusted here.

5.6.3   The Servers Tab

When the *Bluetooth* connection is initiated from your NEO to the remote device, NEO is called the 'client' and the remote device is called the 'server'. The *Servers* tab displays the server profiles that can be activated in your hand-held. There is currently one server profile available: *Serial*.
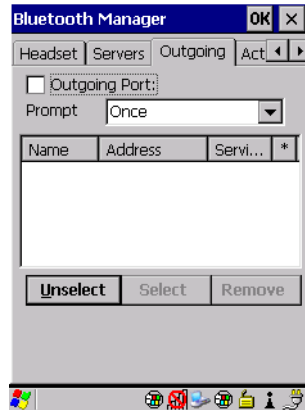
• Tap on the checkbox to activate the server, and it will display the associated port name beside the server name.

Once you activate a server profile, it is recommended that NEO be rebooted before you try to bond from a server.

Note: You do not need to reboot if you are deactivating a server.

5.6.4   Outgoing Tab

Outgoing Port acts as a serial port that can be used to connect to a list of *Bluetooth* devices (one at a time), but you have the freedom to switch on-the-fly.

The *Outgoing Port* checkbox allows you to create the Outgoing port. When the port is created, the *Outgoing* tab lists the port name.

The *Outgoing* list dialog box displays a list of services marked as 'Outgoing'. The * column indicates the currently selected service. You can tap on **Unselect** to reset the current selection, or you can tap on **Select** to make a selection. The **Remove** button deletes the service from the outgoing list.

The *Prompt* menu determines the behaviour of the pop-up *Selection* menu. Choosing **Everytime** causes the *Selection* menu to be displayed each time an outgoing port is created. If you choose *Once*, the menu is displayed only when a partner service is not selected.

To display the *Selection* menu at any time:

•   Press [CTRL] [ALT] [F1], and switch the partner *Bluetooth* device.

If a connection to a partner device already exists, the connection is dropped and another connection to the newly selected device is created instantly without disrupting the application that has opened the outgoing port.

Note: To add a service to the Outgoing port, an active service must first be deactivated. Then you can choose the 'Outgoing' option from the Activation menu (highlight a service, right-click or press the [SPACE] bar to display the Activation menu).

5.6.5   Active Conn. Tab

The *Active Conn* tab lists the *Name*, *Address*, and *Type* of the currently active connections. The table is periodically updated, but it can take a few seconds before it reflects the actual list of connections. The *Type* column of the table shows 'ACL' or 'SCO'. The Connection list table shows the connections for scanning as well as the service connections.

Note: You can change the device-name and description of your radio by clicking on the ***System*** *icon in Control Panel, which will open the System Properties dialog box. Click on the* ***Device Name*** *tab to access the menu and change your settings. Then click on* ***OK***.*

Although the name will have changed in the Properties menu in ***Bluetooth*** *Controls, the radio only reads it on boot-up. For the changes to take effect, you must reset NEO (for reset instructions, see "Resetting NEO" on page 20).*

5.6.6 Properties Tab
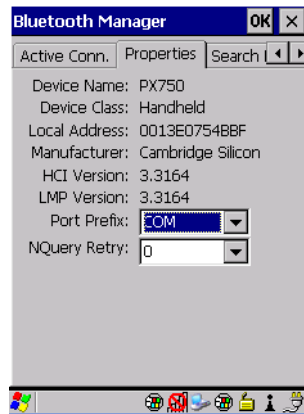
The *Properties* tab displays information about your NEO and provides some port options.

The *Device Name* field shows the device name of your NEO. This name can be changed (see the *Note* on the previous page for details).

Device Class shows the Class of Device (e.g. desktop, hand-held), which is always set to *Handheld*.

*Local **Bluetooth** Address* shows the address of your NEO radio.

Port Prefix is used to set the port name to either *BSP* or *COM*. When the name is set to *BSP*, BSP2 to BSP9 are available for activated services (including the server). When *COM* is chosen, COM7 to COM9 are available.

NQuery Retry (Name Query Retry) governs the number of times the hand-held will attempt to query the names of other *Bluetooth* devices if the first attempt fails. (When NEO scans for other devices, it sometimes fails to scan names.)

Note: Keep in mind that setting this parameter to a higher value will lengthen the scan time.

## 5.6.7   Search For Tab
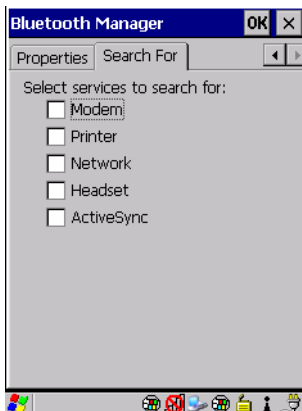
The *Search For* tab allows you to specify the services for which the *Bluetooth* radio will scan.

5.6.8   *Bluetooth* GPRS WAN Connection

The following steps describe how to set up an internet data connection using a GSM cellular telephone with *Bluetooth*. NEO communicates via *Bluetooth* to the cell phone, which then accesses a WAN (Wide Area Network) and transfers data using GPRS.

1. Enable the Dial-Up Networking service in the cell phone.

2. Make the phone discoverable.

3. Pair the phone service with the NEO Dial-Up Networking service using the *Bluetooth* Manager (for instructions on pairing devices, see "The Devices Tab" on page 104).
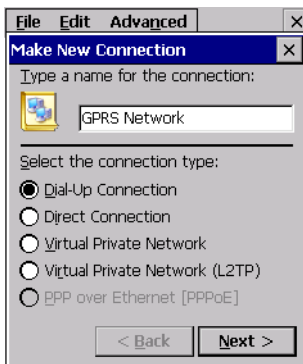
4. To set up the internet parameters on the NEO, choose the **Network And Dial-up Connections** icon from the *Control Panel.*
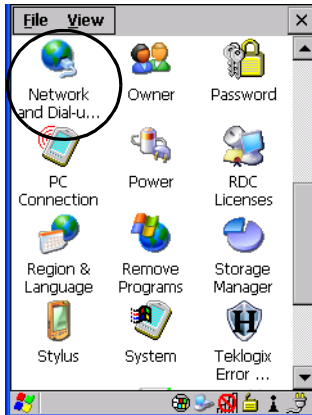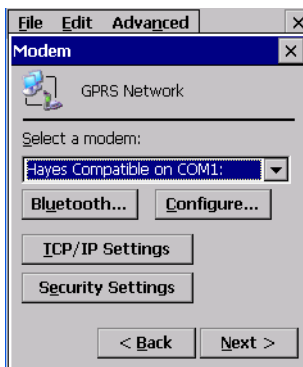

5. Choose the **Make New Connection** icon.
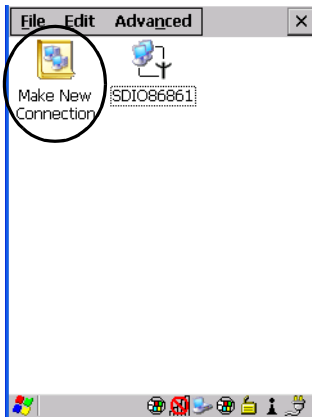
6. In the *Make New Connection* dialog box, choose **Dial-Up Connection**. Enter a name for your GPRS network connection.
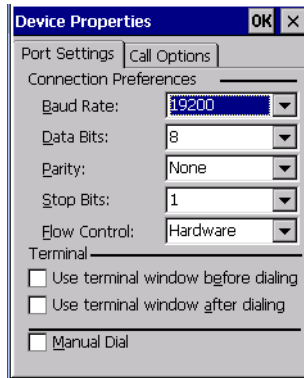

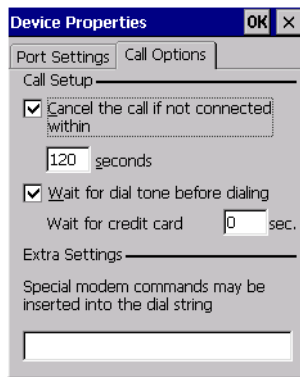7. Choose the **Next** button to display the *Modem* dialog box.

8. In the drop-down menu labelled *Select a modem*, choose the name of the modem with which you want to connect, and then choose the **Configure** button to display the *Device Properties* dialog box.

NEO communicates via *Bluetooth* to your *Bluetooth*-equipped cellular telephone and re-trieves the parameters for the *Device Properties* dialog box. NEO then disconnects.

9. Under the *Call Options* tab, turn off **Cancel the call if not connected within,** and press [ENTER] to save your changes.

10. In the *Modem* dialog box, choose the **Next** button to display the *Phone Number* dialog box.
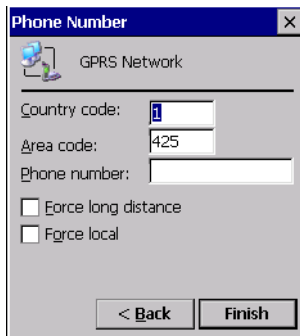
The phone number you enter is network carrier dependent. Once you've specified all the necessary information, choose the **Finish** button.

11. In the *Control Panel*, choose the **Dialing** icon.


12. The values in the *Dialing Properties* dialog box need to be edited according to your network carrier specifications.

Once you've edited this dialog box to reflect your network carrier requirements, press [ENTER] to save your changes.

13. At this point, you'll need to return to the *Control Panel,* and choose the **Network and Dial-up Connections** icon.

14. In the network connection window, the new network configuration, in this case *lg cx245*is displayed. Tap on the **new** icon.
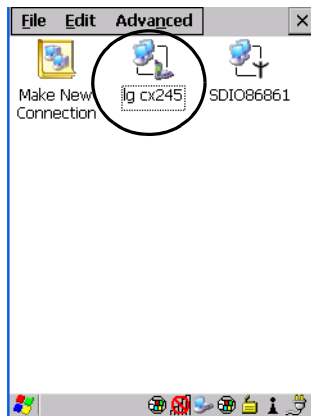
When you tap on your new connection, an onscreen message indicates the status of your connection: connected, disconnected, error messages, and so on.

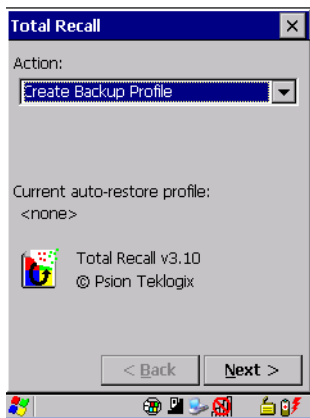## 5.7 Total Recall

Total Recall is a Psion Teklogix utility developed to maintain applications and settings during a cold boot. This utility is based on a backup and restore concept.

• In the *Control Panel*, choose the **Total Recall** icon.
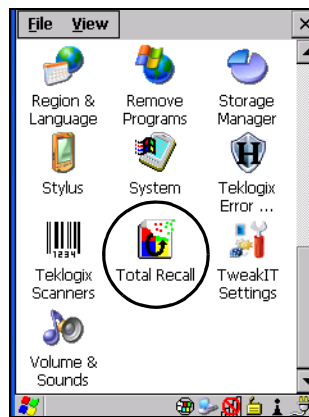
5.7.1 Creating A Backup Profile

In the drop-down menu, you can choose from four options: *Create Backup Profile*, *View Selected Profile*, *Restore Selected Profile* and *Delete Selected Profile*. Keep in mind however that until a profile is created, the only available option is *Create Backup Profile*.

• Choose the **Next** button to begin the process.

Profile Information
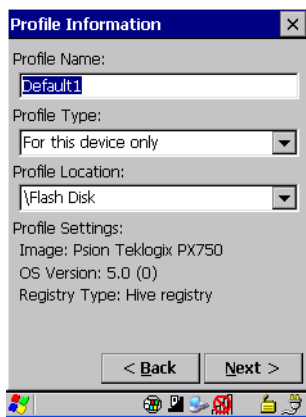
This dialog box lists the possible storage destinations for the profile file.

1. To begin, type a name for the profile in the field labelled *Profile Name*.
2. Choose the *Profile Type* you want to create:

   For this device only – creates a backup that is manually restored by the operator.

AutoRestore for this device only – creates a profile that automatically restores itself following a restart.

AutoRestore for this and other devices – creates a profile that automatically restores after resuming from a restart, but it will not contain the touchscreen calibration coordinates or the Wireless radio settings.

3. Finally, choose the *Profile Location* – \Flash Disk.

4. Tap on the **Next** button to display the next dialog box *Add Files*.
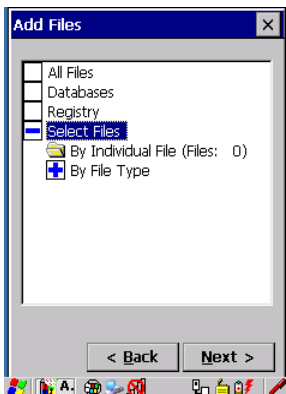
Add Files
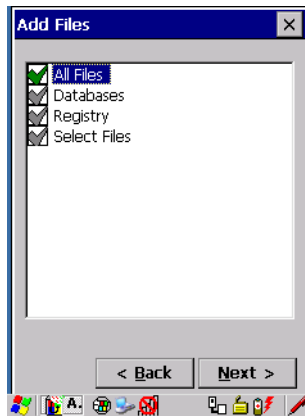
By default, *All Files* is selected so that all installed or copied files, database entries, and the Registry will be saved. You can, however, limit the backup to databases, and/or the registry only. By tapping the checkbox next to these items, you can add or remove a check mark to enable or disable the option.

The *Select Files* option allows you to select predefined file types.

• Remove the check mark next to *All Files*. You'll notice the checkbox next to *Select Files* changes ⊞, indicating that additional options are available.

• Choose this icon ⊞ next to *Select Files* to view your options.

Choosing *By Individual File* displays a pop-up menu where you can tailor the list of files you want to back up.
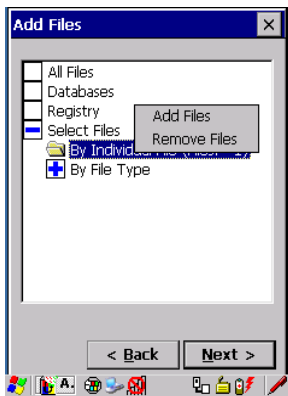

To add a file to your backup list:

• Choose **Add Files**. Browse to and choose the files you want to add to your list.

To remove a file from your backup list:

• Choose **Remove Files** – a dialog box is displayed listing the files that will be backed up.

• Highlight the item you want to remove from the list, and tap on the **Remove** button.

Choosing *By File Type* allows you to select the file types that you want backed up.
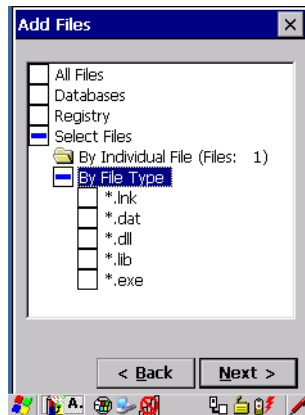
View Selections

Depending on what you have selected for inclusion in your profile, you can view a list of the selected files, databases and/or registry.
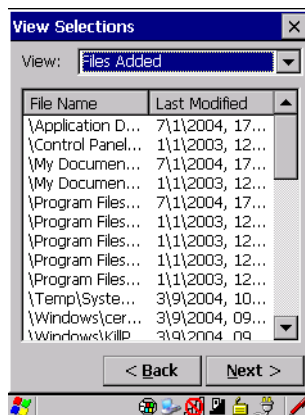
- Choose the **Next** button to perform the operation.

Perform The Operation

• Choose the **Backup** button to start the process, and create a profile.

5.7.2   Restoring A Profile

To manually restore a profile:

• Choose **Restore Selected Profile** from the drop-down menu, and choose the **Profile Name** displayed in the drop-down menu.
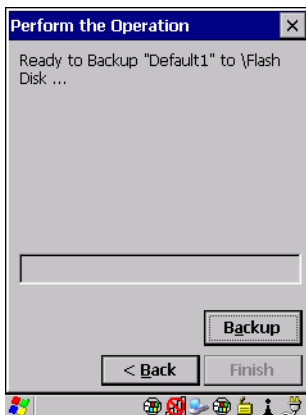
Note: You can also manually restore an auto restore profile located in flash or a storage device.

5.8   The Storage Manager

The *Storage Manager* allows the user to view information about the microSD card present in NEO.

## 5.8.1   Formatting A Memory Card

Formatting a memory card bulk-erases it. Once a card is erased, partitions may be created in it, much like those on a hard drive. Memory-card devices are normally 'mounted' (made available to the system) automatically when they are inserted. They must be dismounted before they can be formatted.

To format an entire memory card:

1. Choose **Start> Settings>Control Panel**.

2. In *Control Panel*, double-click on the **Storage Manager** icon. The *Storage Manager* menu opens:
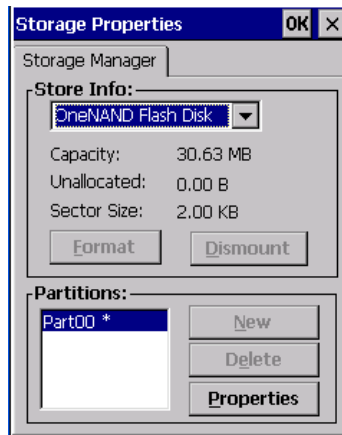
3. Choose the memory card from the drop-down list.

4. Press the **Dismount** button to dismount the memory card. All partitions on the card will be dismounted.

5. Press the **Format** button to format the memory card.

All partitions and information on the card will be erased during the formatting process.

5.8.2 Creating Partitions

Once the card is formatted, new partitions can be created in it. The default is to create one partition that occupies the whole card, but a card can be divided into more than one partition if desired. Each partition appears as a separate folder in Windows Explorer.

To create new partitions:

1. Tap the **New** button next to the *Partitions* list box. The Create New Partition dialog box appears:
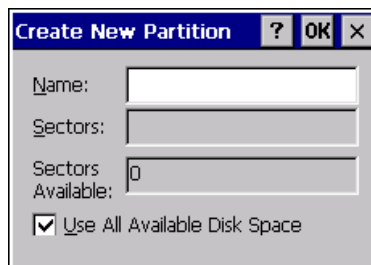
2. Type a name for the partition.

3. If more than one partition is desired, uncheck the *Use All Available Disk Space* checkbox, then specify the desired number of sectors to be used by the partition:

Note: The sector size of the card is given on the left-hand side of the Storage Properties dialog.

4. Tap **OK**. The new partition appears in the *Partitions* list at the bottom of the

The new partition is automatically mounted. This is indicated by an asterisk (*) next to its name in the partition list. Any unallocated space on the card is indicated at the left, and additional partitions can be created in it.

5.8.3 Partition Management

Partitions can be individually dismounted, mounted, deleted, or formatted as well. These and additional tasks are available from the *Partition Properties* dialog:

To dismount a partition:

• Choose the desired partition.

• Tap the **Properties** button. The *Partition Properties* dialog appears.

• Tap the **Dismount** button. The partition is dismounted. The asterisk disappears next to its name in the partitions list.

To delete a partition:

• Select the desired partition.

- Tap the **Delete** button. A warning dialog appears.
- Tap the **OK** button. The partition is deleted.

To format a partition:

1. Choose the desired partition.
2. Tap the **Properties** button. The *Partition Properties* dialog appears.
3. Tap the **Dismount** button. The partition is dismounted. The asterisk disappears next to its name in the partitions list.
4. Tap the **Format** button. The *Format* dialog appears:
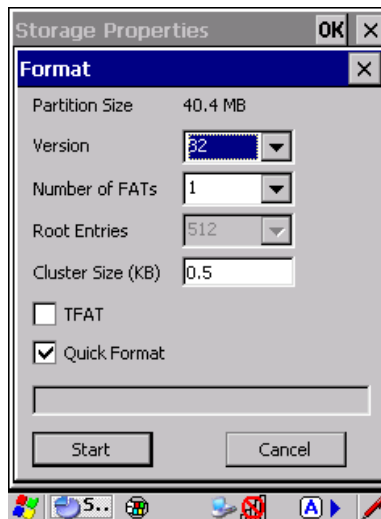
5. Choose your format options. These options include:

   - Version of file system (FAT-16, for devices holding up to 4 GB; or FAT-32, for devices containing up to 32 GB).
   - Number of FATs (File-Allocation Tables).
   - Number of entries allowed in the root directory.
   - Cluster size (.5 KB to 64 KB).

There are also two checkboxes, which govern:

   - Whether to use the transaction-safe FAT file system (TFAT). This file system keeps multiple copies of the file-allocation table, changing one while maintaining another as a backup.

> • Whether to perform a quick format. Quick formatting removes all reference to data in the partition without erasing the actual partition. The partition will be treated as empty, and new data will overwrite it.

6. Tap **Start**. The partition is formatted.

To mount a partition:

• Choose the desired partition.

• Tap the **Properties** button. The *Partition Properties* dialog appears.

• Tap the **Mount** button. The partition is mounted. The asterisk appears next to its name in the partitions list.

The Partition Properties dialog has buttons for additional functions. Partitions can be defragmented, and their file structure can be scanned.
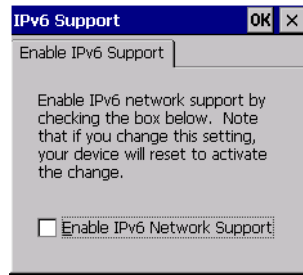
5.9   IPv6 Support

The *IPv6 Support* icon in the *Control Panel* allows you to activate IPv6 network support on your unit if your network setup requires this. This internet protocol specification (version 6) supports 128-bit IP addresses, replacing version 4.

Figure 5.12 IPv6 Support Icon
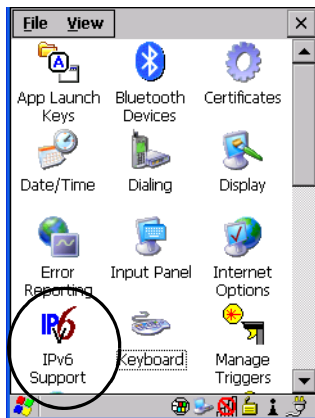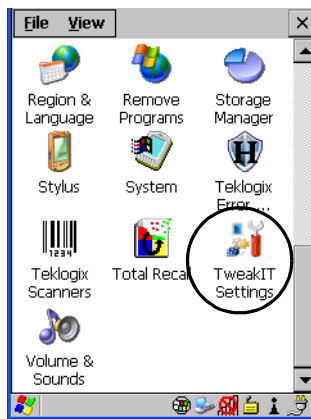
• Choose the **IPv6 Support** icon to display the associated dialog box.

• Choose the checkbox next to *Enable IPv6 Network Support* to enable this internet protocol.

5.10 TweakIT

This utility allows you to 'tweak' or adjust *Advanced* system settings (interface, network and servers), *User* settings (font size and docking port message), and provides a *Registry Editor*.

5.10.1 Advanced Interface And Network
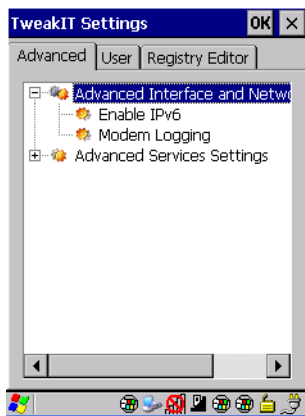
Enable IPv6

This option allows you to enabled Internet Protocol specification, version 6, that has been published to use 128-bit IP address (replacing version 4).

Modem Logging

When this option is enabled, NEO logs AT commands (e.g., dial-out information, password string, etc.) that the administrator can monitor for debugging purposes. Modem commands are stored in: \MdmLog.txt.

5.10.2 Advanced Services Settings

FTP Server

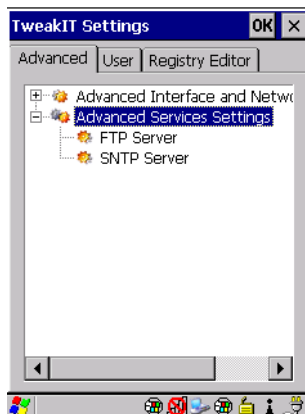This option is enabled by default to allow file transfers. Keep in mind that data transfer in either direction is restricted to the Temp folder—that is, data are always loaded from the *FTP Server* to the *Temp* folder and from the *Temp* folder to the *FTP Server*.

If this option is disabled, a warm reset must be performed to accept the change.

SNTP (Simple Network Time Protocol) Server

The *SNTP Server Name* typed in this dialog box is used to synchronize NEO time with the time server time. A warm reset must be performed once the server name as been entered.

5.10.3   Internet Explorer Settings
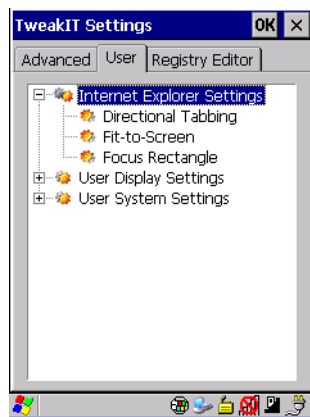
These *Internet Explorer* options are designed to make it easier to view and navigate web pages displayed on NEO.

Directional Tabbing, Fit-to-Screen and Focus Rectangle

When *Directional Tabbing* is enabled, arrow keys can be used to navigate to various links, text boxes and so on around the page rather than limiting you to the [TAB] key. *Fit-to-Screen* reformats the web page on the NEO screen into a single column, eliminating the need for horizontal scrolling. Enabling *Focus Rectangle* adds a yellow rectangle around the cursor to make it clearly visible on the screen.

5.10.4 User Display Settings
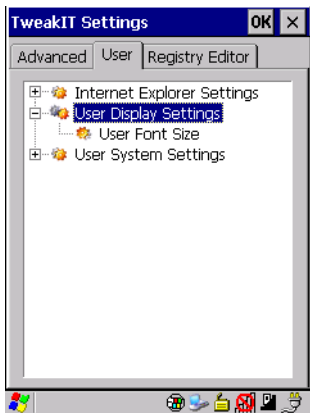
User Font Size

This option allows you to adjust the size of the font used on the NEO display: *Large*, *Normal* or *Small*.

5.10.5 User System Settings
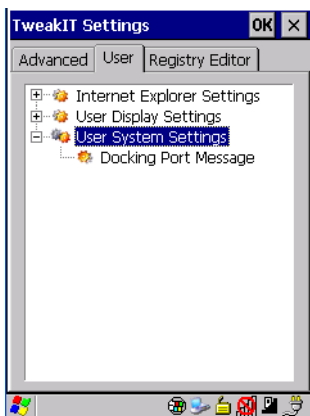
Docking Port Message

Checking this box blocks the message that normally pops up on the display when NEO is docked.

5.10.6 Registry Editor
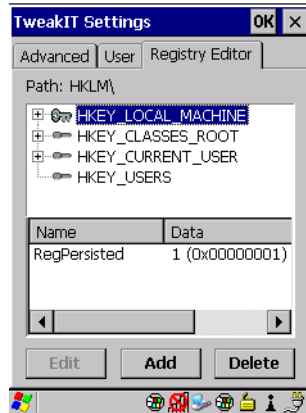
This option is reserved for senior administrators who have a strong understanding of registry keys and values. Careless registry editing can cause irreversible damage to NEO.

5.11 Error Reporting

Error Reporting allows you to enable or disable Microsoft error reporting prompts.

• Tap on **Start>Settings>Control Panel**. Tap on the **Error Reporting** icon.
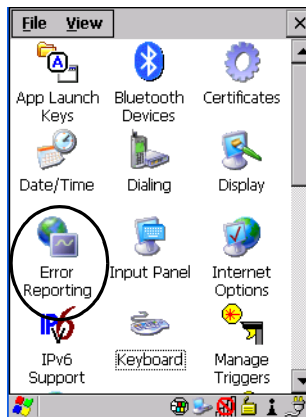
5.12   Teklogix Error Handling Service

- Tap on **Start>Settings**>**Control Panel**. Tap on the **Teklogix Error Handling Service** icon.
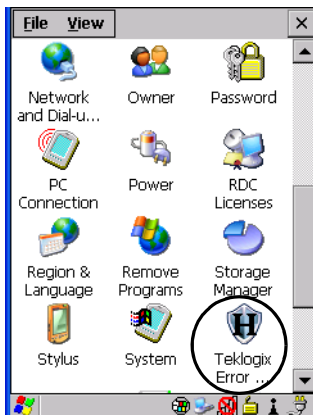
Teklogix Error Handling Service is an error diagnostic tool. Tapping in the checkbox next to *Enable error reporting* enables this service.
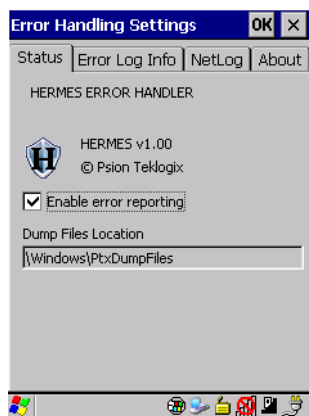
5.12.1   ErrorLogInfo

- To log errors, tap on the **ErrorLogInfo** tab.
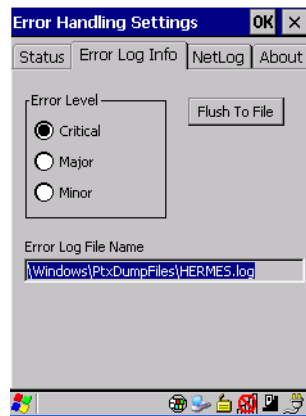
• Choose an **Error Level**, and tap on **FlushToFile** to log the information file.

Psion Teklogix personnel can help you retrieve and forward the information file to our offices.

5.12.2 NetLog
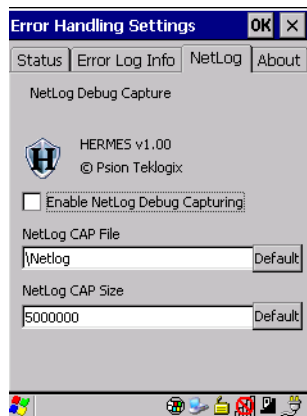
The *NetLog* option is used to log network traffic. When you tap in the checkbox to the left of *Enable NetLog Debug Capturing*, debug data is collected so that, if necessary, it can be forwarded to a Psion Teklogix technician for evaluation. You can also define where you want the data stored and the maximum size of the file.

5.13   Scanner Settings

The *Teklogix Scanners* icon in the *Control Panel* provides dialog boxes in which you can tailor bar code options and choose the bar codes your scanner will recognize. The parameters are preset with the default settings of the decoded scanner installed in the unit. **Not all options apply to all scanners**.

Figure 5.13 Teklogix Scanners Icon
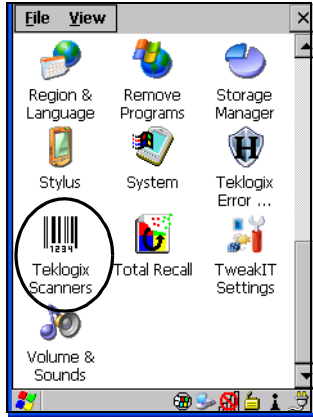
For a listing of available scanners and their specifications, please refer to Chapter 7: "Specifications".

5.13.1   Bar Codes
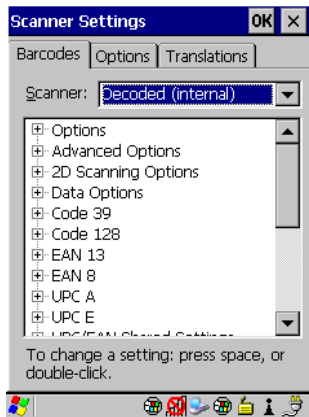
5.13.1.1 Scanner

The drop-down menu to the right of the *Scanner* option allows you to choose from one of the following scanner types used with your hand-held: *Decoded* (internal) and *Decoded* (ISCP).

The symbologies listed change to reflect the scanner you choose and the bar codes it supports.

⚠ *Important:* ***To improve the decode speed and performance, enable only those codes that***
are required by the application.

Keep in mind that some bar code types are only available when an internal imaging scanner is installed. All internal scanners can be configured using the *Barcode* dialog boxes.

5.13.1.2 Restoring Default Settings

If you want to restore the factory defaults after making changes, the defaults can be applied to a selected parameter, sub-tree of parameters or all scanner parameters.

• Press and hold the stylus on a symbology (e.g., Code 128) to display a pop up a menu.
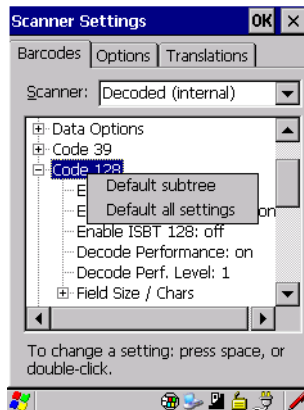
• Choose **Default subtree** to reset only the parameters in the symbology you selected, or choose **Default all settings** to reset all scanner parameters to default settings.

To reset a single parameter to its default setting:

• Press and hold the stylus on the parameter you want to reset.
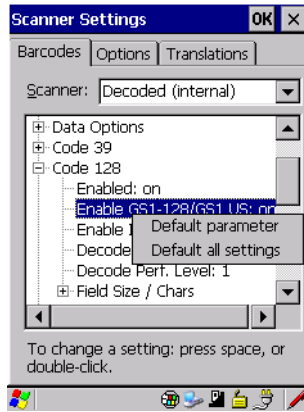
• Choose **Default parameter** to reset the parameter to the default setting.

5.13.2 Decoded (Internal) Scanners
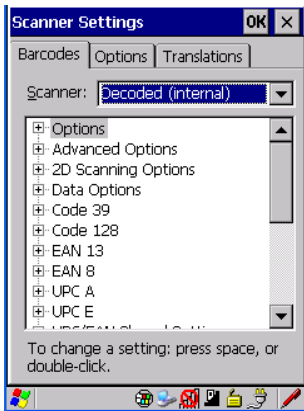
• Tap on the **Scanner** drop-down menu, and choose **Decoded (internal)**.

5.13.2.1 Options

Note: Some options are available only for specific scanners. Refer to the option names in this section for scanner model identification.

Aim Duration

This parameter determines the total time the aiming pattern appears before the scanner laser begins sweeping. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value from *0* to *30* (0 to 3 sec.). A value of **0** (zero) disables the aiming-dot.

Laser On Time

The value assigned to this parameter determines how long the laser will remain on when the scan button or trigger is pressed. Double-tapping on this parameter displays a dialog box in which you can enter a value between *5* and *99*, each number representing 0.1 seconds.

5.13.2.2 Decoded (Internal) - Advanced Options

Continuous Scan Mode

Setting this parameter to **on** keeps the laser on and continuously decoding as long as the scanner button is pressed and held down.

Minimum Cancel Time

The value assigned to this parameter determines the time delay before the scanner is turned off, once the scanner trigger or button is released. This gives the scanner a minimum amount of time to complete its current decode before the scan is cancelled when the user quickly triggers on/off.

Low Power Timeout

To extend laser life, you can select the time the scanner remains active following a successful decode. The scanner wakes from low power mode when a bar code is scanned—a successful decode restores normal blinking.

This is only used if the unit's Trigger Mode has been changed to Continuous On. If the unit is used in a fixed mount this parameter might be used, but not if the unit is used as a hand-held.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a value of *30 sec.*, *1 min.*, *2 min.,* or *3 min*.

Parameter Scanning

Setting this parameter to **on** allows the scanner to respond to programming bar codes that can be found in the scanner manual. Scanning these is an alternative way to reprogram some of the scanner features

⚠️ *Important: **Psion Teklogix strongly recommends that this parameter only be enabled by personnel with a very strong understanding the scanner and how it operates. Scanning the wrong parameter code can result in an inoperable unit; if this occurs, the unit will need to be shipped to a depot for repair.***

Linear Security Level

This parameter allows you to select the security level appropriate for your bar code quality. There are four levels of decode security for linear code types (e.g., Code 39, Interleaved 2 of 5). Higher security levels should be selected for decreasing levels of bar code quality. As security levels increase, the scanner's decode speed decreases.

Double-tapping on this parameter displays a dialog box in which you can enter a value from **1** to **4**.

*Linear security level **1*** specifies that the following code types must be successfully read twice before being decoded:

Code Type	Length
Codabar	All
MSI Plessey	4 or less
D 5 of 5	8 or less
I 2 of 5	8 or less

*Linear security level **2*** specifies that all types of codes must be successfully read twice before being decoded.

*Linear security level **3*** specifies that code types other than the following must be successfully read twice before being decoded. The following codes must be read three times:

Code Type	Length
MSI Plessey	4 or less
D 2 of 5	8 or less
I 2 of 5	8 or less

*Linear security level **4*** requires that all code types be successfully read three times before being decoded.

Bi-Direction Redundancy

Note: This parameter is only valid if a" Linear Security Level" is enabled.

When this parameter is enabled, a bar code must be successfully scanned in both directions (forward and reverse) before being decoded.

Scan Angle

This option allows you to choose from two scan angles: *Normal Angle* or *Alternate Angle*. Choosing *Normal Angle* allows the normal operation for scanning long range and short range. Choosing *Alternate Angle* widens the beam to allow scanning of long bar codes at short range but at the cost of long range scanning.

5.13.2.3 Decoded (Internal) Data Options

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a transmit code: *None*, *AIM,* or *Symbol*.

Scan Data Format

This parameter allows you to change the scan data transmission format. Double-tapping on **Scan Data Format** displays the following options from which you can choose a data format: *data (as-is), data [S1], data [S2], data [S1][S2], [P] data, [P] data [S1], [P] data [S2],* and *[P] data [S1][S2]*.

Prefix [P], Suffix [S1] And Suffix [S2]

A prefix and/or one or two suffixes may be appended to scan data for use in data editing.

When you double-tap on these parameters, a dialog box is displayed in which you can enter a value from **0** to **255**.

Delete Char Set ECIs

Setting this parameter to **on** enables the scanner to delete any escape sequences representing Character Set ECIs—Extended Channel Interpretations (also known as GLIs) – from its buffer before transmission.

When this parameter is enabled, the scanner transmits data from PDF417 and MicroPDF417 bar codes containing Character Set ECIs, even when the ECI Protocol is disabled.

ECI Decoder

Setting this parameter to **on** enables the scanner to interpret any Extended Channel Interpretations (ECIs) supported by the scanner. This parameter has no effect on symbols that were not encoded using ECIs.

If this parameter is set to **OFF** and a symbol that was encoded using an ECI escape is scanned, the scanner transmits the ECI escape followed by the data that was not interpreted.

5.13.2.4 Code 39

Enabled

Setting this parameter to **on** enables "Code 39".

Enable Trioptic Code 39

Note: "Trioptic Code 39" and "Full ASCII" should not be enabled simultaneously. The scanner does not automatically discriminate between these two symbologies.

Trioptic Code 39 symbols always contain six characters. Setting this parameter to **on** allows this type of symbology to be recognized.

Convert To Code 32

Note: "Code 39" must be enabled in order for this parameter to function.

Setting this parameter to **on** allows the scanner to convert the bar code from "Code 39" to "Code 32".

Code 32 Prefix

Note: "Convert to Code 32" must be enabled in order for this parameter to function.

When this parameter is enabled, the prefix character "A" is added to all "Code 32" bar codes.

Set Length L1 And Set Length L2

Lengths for "Code 39" can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be decoded by your scanner
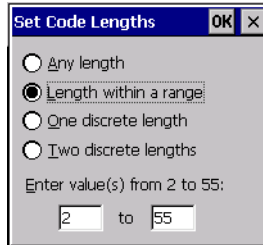
Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **1** to **55**.

Check Digit Verification

When this parameter is enabled, the integrity of a "Code 39" symbol is checked to ensure that it complies with specified algorithms.

Note: Only those "Code 39" symbols that include a Mod 43 check digit are decoded when this parameter is enabled.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must to enabled.

Full ASCII

If this parameter is enabled, the characters +, %, and / are used as escape characters. The combination of an escape character and the next character is converted to an equivalent ASCII character.

Decode Performance

If this parameter is enabled, one of three decode levels can be chosen in the *Decode Performance Level* parameter.

Decode Perf. Level

This parameter provides three levels of decode performance or "aggressiveness" for Code 39 symbols. Increasing the performance level reduces the amount of required bar code orientation—this is useful when scanning very long and/or truncated bar codes. Keep in mind that increased levels reduce decode security.

When you double-tap on this parameter, a dialog box is displayed in which you can enter a decode performance level of between **1** and **3**.

Length Restriction

The parameters in this sub-menu allow you to define the length of the bar codes that will be decoded using either the "Field Size" parameter or the "Minimum Size" and "Maximum Size" parameters (see below). The order of operation to either match the "Field Size" or determine if the length falls between the "Minimum Size" and "Maximum Size" is as follows:

- Strip the leading and trailing characters.
- Add the prefix and suffix characters.
- Count the number of characters remaining to either match the field size or determine if the length falls between the minimum and maximum size.

Field Size

When a value is assigned for this parameter, only bar codes that match the field size exactly can be transmitted. If a value is assigned to this parameter, a "Minimum Size" and "Maximum Size" value is not required.

Minimum Size And Maximum Size

When a value is assigned to these parameters, only bar code lengths that fall between the minimum and maximum value can be decoded. If values are assigned to these parameters, a "Field Size" value is not required.

Add/Remove Data

Prefix Char

This character, if non-zero, is added before a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

Suffix Char

This character, if non-zero, is added after a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

Strip Leading

This parameter determines the number of characters that will be removed from the beginning of the bar code before the prefix character is added.

*Note: For Code 39 bar codes, the "AIAG Strip" is performed **before** the "Strip Leading".*

Strip Trailing

The value entered in this parameter determines the number of characters that will be removed from the end of the bar code before the suffix character is added.

5.13.2.5 Code 128

Enabled

Set this parameter to **on** to enable "Code 128".

Enable GS1-128/GS1 US

Previously UPC/EAN and UCC, these types of bar codes include group separators and start codes.

Enable ISBT 128

To successfully scan this variation, "Enable ISBT 128" must be set to **on**.

Decode Performance

If this parameter is set to on, one of three decode levels assigned to the *Decode Performance Level* parameter can be selected.

Decode Perf. Level

This parameter provides three levels of decode performance or "aggressiveness" for Code 128 symbols. Increasing the performance level reduces the amount of required bar code orientation—this is useful when scanning very long and/or truncated bar codes. Keep in mind that increased levels reduce decode security.

When you double-tap on this parameter, a dialog box is displayed in which you can enter a decode performance level of between **1** and **3**.

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.2.6 EAN 13

Enabled

Set this parameter to **on** to enable "EAN 13".

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.2.7 EAN 8

Enabled

Set this parameter to **on** to enable "EAN 8".

EAN-8 Zero Extend

When this parameter is enabled, five leading zeros are added to decoded EAN-8 symbols, making them compatible in format to EAN-13 symbols. Disabling this parameter returns EAN-8 symbols to their normal format.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.2.8 UPC A

Enabled

Set this parameter to *on* to enable "UPC A".

UPC-A, Check Digit

If you enable this parameter, the check digit is included with the decoded bar code data.

UPC-A, Preamble

When you double-tap on this parameter, a dialog box is displayed where you can choose one of three options for lead-in characters for UPC-A symbols transmitted to the host device:

System Char—system character transmitted with the data,

Country Code and System Char—both the country code ("0" for USA) and system character are transmitted with the data, or

None—no preamble is transmitted. The lead-in characters are considered part of the symbol.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.2.9 UPC E

Enable UPC-E

Set this parameter to **on** to allow "UPC E" bar code scans.

Enable UPC-E1

Set this parameter to **on** to allow "UPC-E1" (zero suppressed) bar code scans.

UPC-E And UPC-E1 Check Digit

If you enable one or both of these parameters, a check digit is included with the decoded bar code data.

UPC-E And UPC-E1 Preamble

When you double-tap on one of these parameters, a dialog box is displayed where you can choose one of three options for lead-in characters for UPC-E and UPC-E1 symbols transmitted to the host device:

System Char – system character transmitted with the data,

Country code and System Char – both the country code ("0" for USA) and system character are transmitted with the data, or

None – no preamble is transmitted. The lead-in characters are considered part of the symbol.

Conv. UPC-E To UPC-A

This parameter converts UPC-E (zero suppressed) decoded data to UPC-A format before transmission. After conversion, data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).

Conv. UPC-E1 To UPC-A

This parameter converts UPC-E1 (zero suppressed) decoded data to UPC-A format before transmission. After conversion, data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.2.10 UPC/EAN Shared Settings

The parameters you set here are a shared across all available UPC and EAN bar codes.

Enable Bookland EAN

Setting this parameter to **on** allows your scanner to recognize Bookland EAN bar codes.

Supplementals

Supplementals are additionally appended characters (2 or 5).

Double-tapping this parameter displays a list of options. If *Ignore* is chosen, UPC/EAN is decoded and the supplemental characters are ignored. If *Decode* is chosen, UPC/EAN symbols are decoded with supplementals. *Autodiscriminate* works in conjunction with the Supp. Redundancy parameter.

Supp. Redundancy

With "Autodiscriminate" selected in the *Supplementals* parameter, *Supp. Redundancy* adjusts the number of times a symbol without supplementals is decoded before transmission.

When you double-tap on this parameter, a dialog is displayed in which you can enter a value between **2** and **20**. A value of *5* or above is recommended when *Autodiscriminate* is selected and you are decoding a mix of UPC/EAN symbols with and without supplementals.

Security Level

This parameter controls the tolerance for decoding edge-to-edge UPC/EAN bar codes. Double-tapping on this parameter displays a dialog box in which you can choose a level from **0** to **3**. Lower values have a lower tolerance for misreads, but they also increase the time it takes to decode the bar code.

Linear Decode

Linear Decode applies to code types containing two adjacent blocks (e.g., UPC-A, EAN-8, EAN-13). When enabled, a bar code is transmitted only when both the left and right blocks are successfully decoded within one laser scan. This option should be enabled when bar codes are in proximity to each other.

2D UPC Half Block Stitching

Setting this parameter to **on** enables "UPC Half Block Stitching" for the omnidirectional scanner engine only.

5.13.2.11 Code 93

Enabled

Set this parameter to **on** to enable "Code 93", or **OFF** to disable it.

Set Length L1 And Set Length L2

Lengths for "Code 93" can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **4** to **55**.

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.2.12 Codabar

Enabled

Set this parameter to **on** to enable "Codabar".

Set Length L1 And Set Length L2

Lengths for "Codabar" can be set for *Any length*, *Length within a range*, *One discrete length*, or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **5** to **55**.

CLSI Editing

When enabled, this parameter strips the start and stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar symbol.

Note: Symbol length does not include start and stop characters.

NOTIS Editing

When enabled, this parameter strips the start and stop characters from decoded Codabar symbol.

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.2.13 MSI Plessey

Enabled

Set this parameter to **on** to enable "MSI Plessey".

Set Length L1 And Set Length L2

Lengths for "MSI Plessey" can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **6** to **55**.

Check Digits

Double-tapping on this parameter displays a dialog box in which you can choose *One* or *Two* check digit(s).

If this parameter is set to *One*, it is assumed that the last digit is a check digit. If "Check Digits" is set to *Two*, it is assumed that the last two digits are check digits.

*Note: If **Two check digits** is selected, an MSI Plessey "Check Digit Algorithm: must also be selected. See below for details.*

Transmit Check Digit

If this parameter is enabled, the check digit is included with the bar code data.

Check Digit Algorithm

When the *Two MSI Plessey* check digits option is selected, an additional verification is required to ensure integrity. Double-tapping on this parameter displays a dialog box n which you can choose the algorithm to be used: *MOD 10/MOD 11* or *MOD 10/MOD 10*.

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.2.14 Interleaved 2 of 5

Enabled

Set this parameter to **on** to enable "Interleaved 2 of 5".

Set Length L1 And Set Length L2

Lengths for "Interleaved 2 of 5" can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **4** to **14**.

Check Digit Verification

When enabled, this parameter checks the integrity of an I 2 of 5 symbol to ensure it complies with a specified algorithm—either USS (Uniform Symbology Specification) or OPCC (Optical Product Code Council).

Transmit Check Digit

If this parameter is enabled, the check digit is included with the bar code data.

Convert To EAN 13

If this parameter is enabled, the I 2 of 5 bar code is converted to EAN 13.

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.2.15 Discrete 2 of 5

Enabled

Set this parameter to **on** to enable "Discrete 2 of 5".

Set Length L1 And Set Length L2

Lengths for "Discrete 2 of 5" can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **1** to **12**.

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.2.16 Composite

⚠️ *Important:* ***To successfully read this type of bar code, the two types of symbologies included in a composite bar code must be enabled. In addition, "Center Bar Code Only" must be disabled.***

A composite symbol includes multi-row 2D components making it compatible with linear and area CCD scanners along with linear and rastering laser scanners.

The options available for this parameter represent multi-level components of a composite symbol.

Enable CC-C And Enable CC-AB

To activate these components, set these parameters to **on**.

Linear Transmission Only

When 'Linear Transmission Only' is enabled, only the linear code portion of the composite bar code is transmitted when scanned.

UPC-EAN Composite Message

This option allows you to choose how UPC-EAN shared bar codes are transmitted: *Always Linked*, *Never Linked* or *Auto-discriminate*.

Enable TLC-39

This composite component integrates MicroPDF417 with the linear code. Setting this parameter to **on** enables this parameter.

5.13.3   Decoded (ISCP)
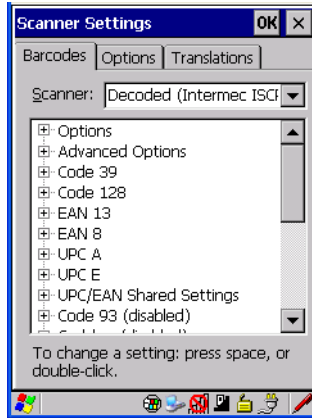
• Tap on the **Scanner** drop-down menu, and choose **Decoded (ISCP).**

5.13.3.1 Decoded (ISCP) - Options

Laser On Time

The value assigned to this parameter determines how long the laser will remain on when the scan button or trigger is pressed.

Double-tapping on this parameter displays a dialog box in which you can enter a value between *1* and *10* seconds.

5.13.3.2 Decoded (ISCP) - Advanced Options

Continuous Scan Mode

Setting this parameter to **on** keeps the laser on and continuously decoding as long as the scanner button is pressed and held down.

Minimum Cancel Time

The value assigned to this parameter determines the time delay before the scanner is turned off, once the scanner trigger or button is released. This gives the scanner a minimum amount of time to complete its current decode before the scan is cancelled when the user quickly triggers on/off.

Low Power Timeout

To extend laser life, you can select the length of time the scanner remains active following a successful decode. The scanner wakes from low power mode when a bar code is scanned—a successful decode restores normal blinking.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a value of *30 sec, 1 min, 2 min*, or *3 min*.

*Note: This parameter is only used if the Trigger Mode has been set to **Continuous On** and the hand-held is mounted in a fixed position; otherwise, 'Low Power Timeout' is not used.*

Parameter Scanning

Setting this parameter to **Enabled** allows decoding of parameter bar codes.

Same Read Validate

The data is only transmitted after repeated reads give the same result. The value assigned at this parameter determines the number of reads required, from *0* to *10* times.

Same Read Timeout

Prevents the same bar code from being read more than once. The value assigned determines after what time period the scanner will timeout, from *0* to *2550 msec*.

Diff Read Timeout

Prevents unwanted reading of other bar codes on the same label. The value assigned determines after what time period the scanner will timeout, from *0* to *2550 msec*.

5.13.3.3 Code 39

Enable

Setting this parameter to **on** enables "Code 39".

Full ASCII

If this parameter is enabled, the characters *+, %*, and */* are used as escape characters. The combination of an escape character and the next character is converted to an equivalent ASCII character.

Reading Range

Determines the reading distance from which a bar code can be successfully scanned. The default setting, *Extended*, allows for increased reading distance.

Start/Stop Transmit

Setting this parameter to **on** enables the transmission of start and stop characters, which are usually not transmitted. Code 39 can start and end with either a *** or a *$* character (see also the next parameter).

Accepted Start Char

This parameter allows the user the option of using one of the two start/stop characters or both (*$* char, *** char, *$* and *** char).

Check Digit Verification

Uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted. The available options are: *Disabled, MOD 43 Check, French CIP*, or *Italian CIP*.

Note: French CIP (French pharmaceutical) is only used with bar codes containing 7 characters.

Italian CIP (Italian pharmaceutical) is also known as Code 32. It is transmitted as a standard Code 39 if checksum is not validated.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Minimum Length

Minimum lengths for the bar code can be set from *0* to *255*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.4 Code 128

Enable

Setting this parameter to **on** enables "Code 128".

GS1-128

"GS1-128" is the GS1 implementation of the Code 128 barcode specification. The former correct name was UCC/EAN-128.

GS1-128 Identifier

"GS1-128 Identifier" allows the AIM ID " ' for EAN 128 to be transmitted or removed. By default, this identifier is transmitted if EAN 128 is enabled.

GTIN Compliant

GTIN (global trade item number) processing transmits EAN 128 as the 14-character EAN/UCC GTIN. To use GTIN processing, you must activate the EAN 128 symbology.

Important: When EAN 128 and GTIN processing are both activated, it is not possible to read normal EAN 128 Codes.

FNC1 Conversion

"FNC1 Conversion" allows the FNC1 character to be converted to another character for applications that cannot use the default <GS> Group Separator or hex (1d).

Double-tapping on this option displays a dialog box listing the allowable range: *0* to *255*.

Enable ISBT 128

To successfully scan this type of bar code (International Society of Blood Transfusion), this option must be set to **on**. If you enable this type of bar code, Code 128/EAN 128 is deactivated to avoid any confusion.

ISBT Concat Transmit

The codes are not concatenated by default. You need to choose one of the options provided for this parameter to send concatenated code. Choosing *Only Concatenated Codes* transmits only concatenated codes—single codes will not be transmitted. Choosing *Concatenated or Single* transmits single codes or concatenated codes. If only one code of a pair is read, that code will be transmitted as a single code. If both codes in a pair are detected, they will be concatenated provided that "ISBT Concat Any Pair" (see below) is enabled.

ISBT Concat Any Pair

Enabling this parameter causes all code pairs that can be, to be concatenated even if they do not comply with Section 4.1 of the "ISBT 128 Bar Code Symbology and Application Specification for Labeling of Whole Blood and Blood Components" (June 2000, Version 1.2.1).

Reading Range

Determines the reading distance from which a bar code can be successfully scanned. The default setting, *Extended*, allows for increased reading distance.

Check Digit Verification

The available options for this parameter are *Disabled* or *French CIP*. This parameter uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.

Note: French CIP (French pharmaceutical) is only used with bar codes containing 7 characters.

Minimum Length

Minimum lengths for the bar code can be set from *0* to *255*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.5 EAN 13 Settings

Enabled

Set this parameter to **on** to enable "EAN 13".

ISBN Conversion

When this parameter (International Standard Book Number) is enabled, the first 3 characters ('978') are ignored and the checksum (0.9, 'X') is calculated on the remaining characters.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.6 EAN 8

Enabled

Set this parameter to **on** to enable "EAN 8".

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Convert To EAN 13

If this parameter is enabled, an EAN 8 bar code is converted to EAN 13.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.7 UPC A

Enabled

Set this parameter to **on** to enable "UPC A" bar code scanning recognition.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Transmit Number System

If this parameter is enabled, the number system digit is transmitted with the decoded bar code data.

Convert To EAN 13

If this parameter is enabled, a UPC A bar code is converted to EAN 13.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.8 UPC E

Enabled

Set this parameter to **on** to enable "UPC E".

Enable UPC-E1

Set this parameter to **on** to allow "UPC-E1" (zero suppressed) bar code scans.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Transmit Number System

If this parameter is enabled, the number system digit is transmitted with the decoded bar code data.

Convert To UPC-A

This parameter converts UPC E (zero suppressed) decoded data to UPC A format before transmission. After conversion, data follows UPC A format and is affected by UPC A programming selections (e.g. Check Digit).

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.9 UPC/EAN Shared Settings

The setting assigned to the "Addendum" parameter associated with this option is shared across all UPC and EAN bar codes.

Addendum

An addendum is a separate bar code, supplementary to the main bar code. This parameter provides two options: *Not Required but Transmitted if Read* or *Required and Transmitted*.

- Double-tap on **Addendum** to display a dialog box listing your options.
- Highlight an item, and tap on **OK**.

When "Addendum" is set to *Not Required but Transmitted if Read*, the scanner searches for an addendum and if one exists, appends it to the main bar code. When the parameter is set to *Required and Transmitted*, the scanner does not accept the main bar code without an addendum.

Addendum Add-on 2 And Addendum Add-on 5

Enabling these parameters sets the length of the addendum bar code to either 2 or 5 characters.

GTIN Compliant

GTIN (global trade item number) processing transmits EAN 128 as the 14-character EAN/UCC GTIN. To use GTIN processing, you must activate the EAN 128 symbology.

⚠️ *Important: When EAN 128 and GTIN processing are both activated, it is not possible to read normal EAN 128 Codes.*

Reading Range

This parameter determines the reading distance from which a bar code can be successfully scanned. The default setting, *Extended*, allows for increased reading distance.

5.13.3.10 Code 93

Enabled

Set this parameter to **on** to enable "Code 93".

Minimum Length

Minimum lengths for the bar code can be set from *0* to *255*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.11 Codabar

Enabled

Set this parameter to **on** to enable "Codabar".

Start/Stop Transmit

Codabar can use the following sets of characters as start and stop characters:

a, b, c, d

A, B, C, D

a, b, c, d, /, t, n, *, e

DC1, DC2, DC3, DC4

Thus, when a set is chosen, the first and last digits of a Codabar message must be one of those characters and the body of the message should not contain these characters. Setting this parameter to *Not Transmitted* strips the start and stop characters from this bar code.

CLSI Library System

When enabled, spaces are inserted after characters 1, 5, 10 in the 14-character label (used in the USA by libraries using the CLSI system).

Check Digit Verification

When enabled, this parameter checks the integrity of a symbol to ensure it complies with a specified algorithm—either USS (Uniform Symbology Specification) or OPCC (Optical Product Code Council).

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Set Length L1, Set Length L2, And Set Length L3

Lengths for "Codabar" can be set from *0* to *255*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on these parameters displays dialog boxes where you can define the code length that will be recognized by your scanner.

Length Mode

You can choose to set L1 as *Minimum Length* or L1,L2,L3 as *Fixed Length*.

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.12 MSI Plessey

Enabled

Set this parameter to **on** to enable "MSI".

Enable Plessy

Set this parameter to **on** to enable "Plessy".

Check Digit Verification

The available options for this parameter are MOD 10 Check and Double MOD 10 Check. This parameter uses the specified algorithm of the option you've chosen to ensure the integ-

rity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Plessy Transmit Check Digit

If the check digit is to be transmitted with the Plessy data, this parameter must be enabled.

Minimum Length

Minimum lengths for the bar code can be set from *0* to *255*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Plessy Minimum Length

Minimum lengths for the Plessy bar code can be set from *0* to *255*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.13 Code 11

Enabled

Set this parameter to **on** to enable "Code 11".

Check Digit Verification

The available options for this parameter are *MOD 10 Check* and *Double MOD 10 Check*. This parameter uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Minimum Length

Minimum lengths for the bar code can be set from *0* to *255*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.14 Interleaved 2 of 5

Enabled

Set this parameter to **on** to enable "Interleaved 2 of 5".

Reading Range

This parameter determines the reading distance from which a bar code can be successfully scanned. The default setting, *Extended*, allows for increased reading distance.

Check Digit Verification

The available options for this parameter are *Disabled, MOD 10 Check* and *French CIP*. "Check Digit Verification" uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.

Note: French CIP (French pharmaceutical) is only used with bar codes containing 7 characters.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Set Length L1, Set Length L2, And Set Length L3

Lengths for "Interleaved 2 of 5" can be set from *0* to *255*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on these parameters displays dialog boxes where you can define the code length that will be recognized by your scanner.

Length Mode

You can chose to set L1 as *Minimum Length* or L1,L2,L3 as *Fixed Length*.

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.15 Matrix 2 of 5

Enabled

Set this parameter to **on** to enable "Matrix 2 of 5".

Minimum Length

Minimum lengths for the bar code can be set from *0* to *255*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.16 Discrete 2 of 5

Enabled

Set this parameter to **on** to enable "Discrete 2 of 5".

Standard 2 of 5 Format

This parameter allows you to choose a standard format – either *Identicon* (6 start/stop bars) or *Computer Identics* (4 start/stop bars).

Check Digit Verification

The available options for this parameter are *Disabled* and *MOD 10 Check*. "Check Digit Verification" uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Set Length L1, Set Length L2, And Set Length L3

Lengths for "Discrete 2 of 5" can be set from *0* to *255*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on these parameters displays dialog boxes where you can define the code length that will be recognized by your scanner.

Length Mode

You can chose to set L1 as *Minimum Length* or L1,L2,L3 as *Fixed Length*.

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.17 Telepen

Enabled

Set this parameter to **on** to enable "Telepen".

Format

This parameter allows you to set the bar code character format to either *ASCII* or *Numeric*.

Minimum Length

Minimum lengths for the bar code can be set from *0* to *255*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.18 RSS Code (Reduced Space Symbology)

Enable

Setting this parameter to **on** enables "RSS Code" scanning capability.

Enable RSS-14

RSS-14 code can be either purely linear or split in half with one half stacked on top of the other half. Stacking the code reduces the bar code length, and providing the nominal height of the code is maintained, it can be omni-directionally scanned.

Enable RSS Limited

"RSS-Limited" is restricted, in that it can only encode 14 digit GTINs (global trade item number) that begin with either a *0* or a *1*. It is not stackable and is not designed to be read omni-directionally.

Enable RSS Expanded

"RSS Expanded" uses the same application identifiers as UCC/EAN-128 codes but they can be split into sections and stacked several rows high, reducing the length of the symbol, while increasing the capacity of data that can be stored. "RSS Expanded" code can be omni-directionally scanned.

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.19 Composite

> ⚠️ *Important: To successfully read this type of bar code, the two types of symbologies included in a composite bar code must be enabled. In addition, "Center Bar Code Only" must be disabled.*

A composite symbol includes multi-row 2D components making it compatible with linear and area CCD scanners along with linear and rastering laser scanners.

The options available for this parameter represent multi-level components of a composite symbol.

Enable CC-C And Enable CC-AB

To activate these components, set these parameters to **on**.

Linear Transmission Only

When 'Linear Transmission Only' is enabled, only the linear code portion of the composite bar code is transmitted when scanned.

UPC-EAN Composite Message

This option allows you to choose how UPC-EAN shared bar codes are transmitted: *Always Linked*, *Never Linked* or *Auto-discriminate*.

5.13.3.20 TLC-39

Enable

Setting this parameter to **on** enables "TLC-39" scanning capability.

Linear Transmission Only

When 'Linear Transmission Only' is enabled, only the linear code portion of the composite bar code is transmitted when scanned.

Security Level

This parameter is used to differentiate between TLC-39 and standard Code 39. Tapping on "Security Level" displays a dialog box in which you can assign a value from 0 to 100. The higher the value assigned, the lower the decode rate.

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.21 PDF-417

Enabled

Set this parameter to **on** to enable "PDF-417".

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.22 Micro PDF-417

Enabled

Set this parameter to **on** to enable "Micro PDF-417".

Code 128 Emulation

When this parameter is enabled, the scanner transmits data from certain Micro PDF-417 symbols as if it was encoded in Code 128 symbols.

If Code 128 Emulation is *enabled*, the following Micro PDF-417 symbols are transmitted with one of the following prefixes:

]C1 if the first codeword is 903-907, 912, 914, 915

]C2 if the first codeword is 908 or 909

]C0 if the first codeword is 910 or 911

If Code 128 Emulation is set to *off*, the Micro PDF-417 symbols are transmitted with one of the following prefixes:

]L3 if the first codeword is 903-907, 912, 914, 915

]L4 if the first codeword is 908 or 909

]L5 if the first codeword is 910 or 911

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.3.23 Codablock

Enable Codablock A

Set this parameter to **on** to enable "Codablock type A".

Enable Codablock F

Set this parameter to **on** to enable "Codablock type F".

Length Restriction

Refer to "Length Restriction" on page 142 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page 142 for details.

5.13.4 Options Tab

This tab allows you to tailor the double-click parameters and the display options associated with your scanner.
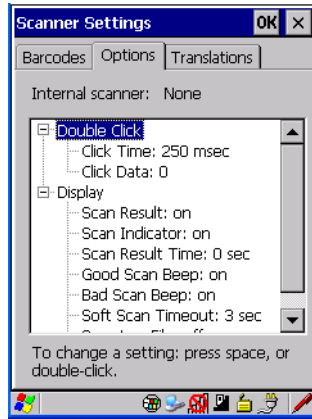
5.13.4.1 Double Click Parameters

Click Time (msec)

This parameter controls the maximum gap time (in milliseconds) for a double-click. If the time between the first and second clicks of the scanner trigger is within this time, it is considered a double-click. The allowable range is 0 to 1000. A value of zero disables this feature.

A double-click produces different results depending on whether or not a value is assigned in the "Click Data" parameter. When a value is not assigned for the "Click Data", double-clicking the scanner trigger overrides the target dot delay set in the "Dot Time" parameter and initiates a normal scan sweep. If a value is assigned for the "Click Data" parameter, double-clicking the scanner trigger inserts the "Click Data" value rather than initiating a scan.

Click Data

This parameter determines which character is sent to the application installed in your NEO following a double-click. A dialog box appears, asking that you press the key you want to insert. The ASCII/Unicode key value of the keypress is displayed.

5.13.4.2 Display Parameters

Scan Result

When this parameter is enabled, the type of bar code and the result of the scan appear on the screen. Note that this information is only displayed after a successful decode and is visible only while the scanner trigger is pressed. When the trigger is released, this information is cleared from the screen.

Scan Indicator

When this parameter is enabled, the laser warning logo appears on the display whenever the scanner is activated.

Scan Result Time (sec)

The value assigned to the "Scan Result Time (sec)" parameter determines how long the scan results of a successful scan are displayed on the screen. Time is measured in seconds, and a value of "0" (zero) disables the parameter. When you choose this option, a dialog box appears where you can enter a value.

Note: To remove the scan result from the screen before the "Result Time" has expired, point the scanner away from the bar code and press the trigger.

Good Scan Beep And Bad Scan Beep

These parameters determine whether or not the NEO emits an audible scanner 'beep' when a good (successful) scan or a bad (unsuccessful) scan is performed. Set these parameters to either *on* to enable the beeper or *off* to disable it.

Soft Scan Timeout

This parameter is used by the SDK "Scan" function (soft-scan: starting a scan session via the SDK function, instead of a physical user trigger press). The value assigned to this parameter determines the soft-scan timeout from 1 to 10 sec. (default is 3 sec.).

Scan Log File

If this parameter is enabled, the input barcode and the modified/translated output bar code are logged in the file \Flash Disk\ScanLog.txt. Keep in mind that if the "Scan Log File" is enabled, there is a slight performance effect when performing multiple scans since the log file is written to persistent storage.

5.13.4.3 Data Handling

This option allows you to choose the code page your NEO will use to display data – *Default Local ASCII* or *ISO-8859-1 Latin 1*.

Codepage:

Tapping on this option displays a window in which you can define the code page your NEO will use.
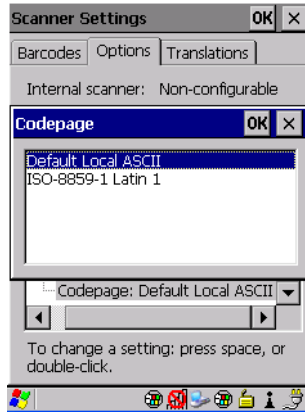
If you choose *Default Local ASCII*, the code page of the local OS is used. For example, if the local OS uses double-byte Chinese characters, choosing this option will filter data through the local ASCII of *that* OS and display it accurately, in this example, using double-byte characters.

If you choose *ISO-8859-1 Latin 1*, data will be displayed according to the character mapping of this Latin 1 code page, ignoring the local OS code page.

5.13.5 Translations Tab

The *Translations* tab allows you to define up to 10 cases, each consisting of up to 10 rules in sequential order. Only one case will be applied to a bar code and a case will only be applied if all rules specified in the case are successful—if a rule within a case fails, the entire case fails.
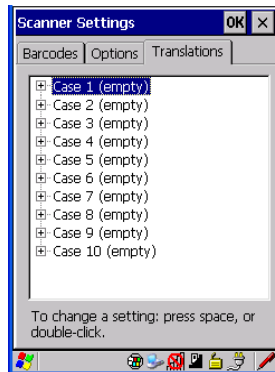
- In the *Translation* tab, tap on the **Case #** to create rules.
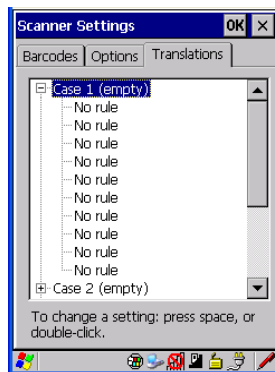
• Tap on the **No rule** drop-down menu to display the rules.
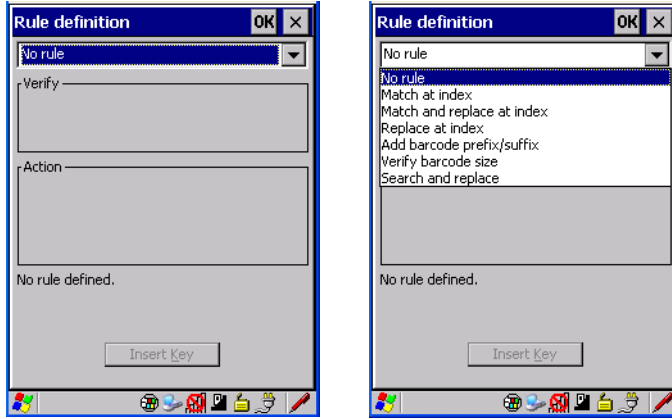
When you choose a rule, an associated screen is displayed in which you can define the rule.
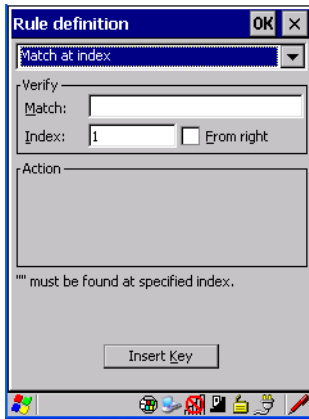
5.13.5.1 Case Rules

The case rules are defined as follows:

• *No rule*—ignored.

• *Match at index*—matches the match string at a specified index.

• *Match and replace at index*—matches the match string at a specified index and replaces/changes it.

• *Replace at index*—replaces/changes unspecified data in a given range.

• *Add barcode prefix/suffix*—adds a global prefix or suffix.

- *Verify barcode size*—verifies the bar code size. This rule should generally be assigned first, before creating subsequent rules.

- *Search and replace*—replaces all instances of the match string. (Note that this rule cannot fail.)

Note: Keep in mind that the effects of previously applied rules must be taken into account when creating subsequent rules. For example, if the bar code size is important, it should be checked before any rules that might change the size are applied.

Translation information about the status of each case/rule is displayed in the scan log file (see "Scan Log File" on page 169) when enabled. This is useful if a case fails, and you are trying to determine why a rule is failing.

6.1   Carrying Accessories

There are a variety of carrying accessories to help the operator work safely and comfortably with NEO.

Table 6.1   Carrying Accessories

Carrying Accessory	Model Number
Hand Strap	PX3024
Wrist Strap (with stitched stylus holder)	PX3028
Carrying Holster (compatible with pistol grip)	PX3020
Shoulder Strap	PX3022
Belt Kit including Belt Clip, Adaptor Plate and screws	PX3025
Pistol Grip	PX3030

Important: Carrying accessory screws have adhesive pre-applied to them. Do not add adhesives to secure screws on carrying accessories; these chemicals may damage the plastic casing.

6.1.1   Attaching The Hand Strap

The hand strap provides a secure means for operators to carry NEO.

Figure 6.1 The Hand Strap

Eyelet for Screw

Eyelet for
Attaching Tether

Stylus Holder

Elastic Strap

Quick Release
Buckle

Adjustable Velcro
Clasp
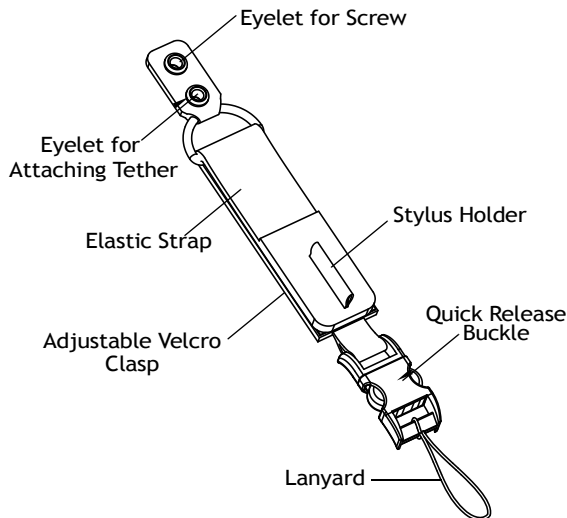
Lanyard

• Thread the lanyard attached to the quick release buckle through one of the accessory attachment points – the eyelets on the either side of the base of the unit. You may find Figure 6.2 useful as a reference.

Figure 6.2 Attaching The Quick Release Buckle

1   2   3
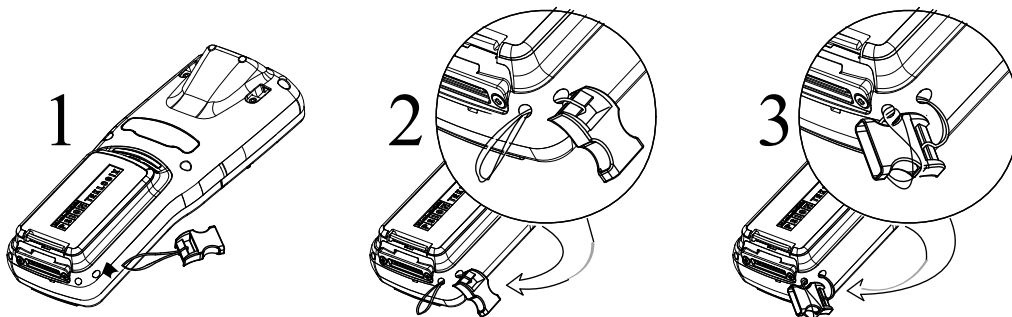
• Guide the quick release buckle through the lanyard loop to secure it to the unit.

- To attach the hand strap, align the eyelet at the top of the hand strap with the threaded insert near the corner of the hand-held, and secure it in place using the M2x6 screw included with the hand strap.

Figure 6.3 Attaching The Hand Strap
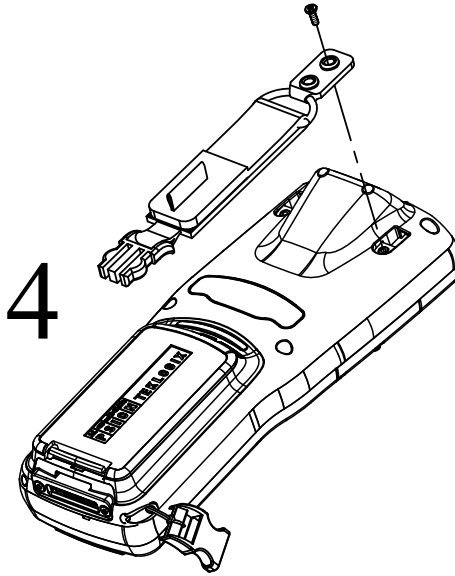
- Snap the hand-strap buckle into the lanyard quick release buckle.
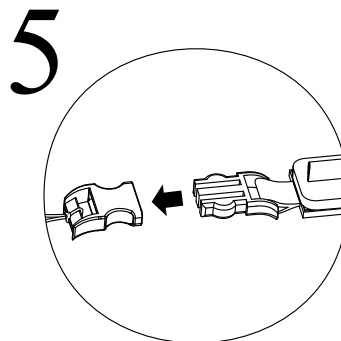
• Pull up the velcro clasp to adjust the hand strap to fit your hand as required.

Stylus Holder
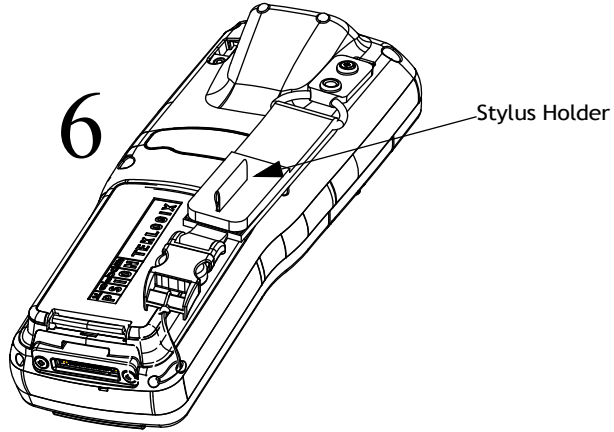
Note: In addition to the hand strap, the lanyard with quick release buckle is also used to attach the wrist strap (shipped with the hand-held) and the optional shoulder strap to NEO.

6.1.2   Belt Clip Installation

Figure 6.4 Belt Clip Installation Kit

Belt Clip
Adaptor Plate

Screw M2 x 6

Belt Clip attached here

Metal Eyelet

Foam Pad under
Folded End

Metal Insert
On NEO Unit
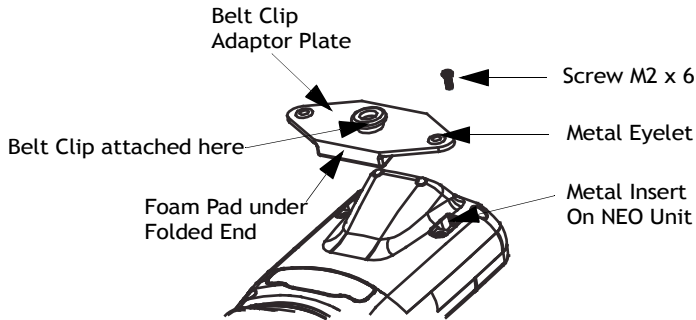
• Position the **belt clip adaptor plate** so that the thicker, folded end aligns with the angled scanner section on the back of NEO as illustrated in Figure 6.5.

Figure 6.5 Aligning The Belt Clip Adaptor Plate For Installation

Folded End

Angled Scanner
Section
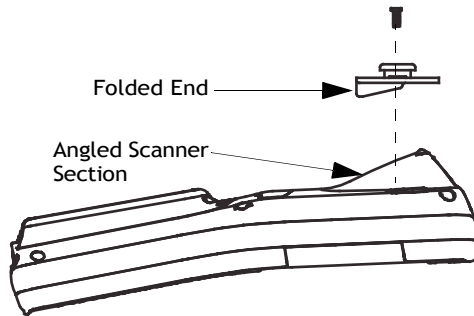
- To attach the belt clip adaptor plate to NEO, thread the screws through the eyelets into the metal inserts on NEO.

Figure 6.6 Attaching The Adaptor Plate

Attach Belt Clip here

Metal Insert

Metal Insert
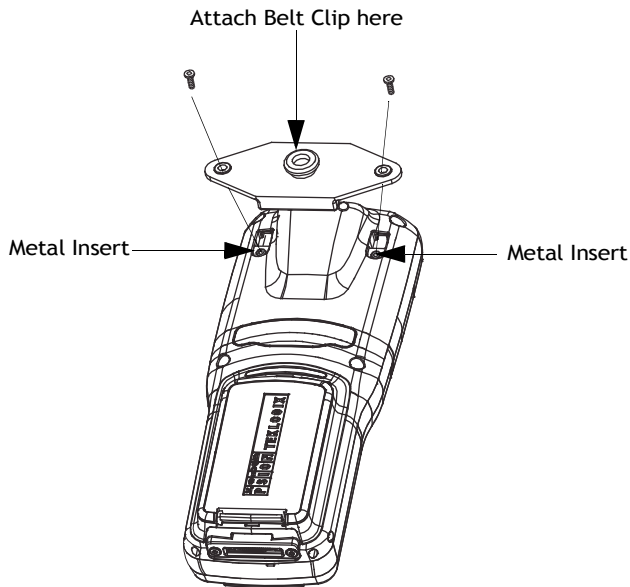
- With the adaptor plate attached to NEO, join the plastic belt clip (included in your kit) to the adaptor plate.

6.1.3   The Expansion Port

NEO is equipped with an expansion port so that customised modules (i.e., RFID) can be easily added to your hand-held computer as they are required.

Expansion
Port Covered

Expansion Port

Expansion
Port Cover

> ⚠️ *Important: Do not remove the expansion port cover unless an expansion module is being installed.*

6.1.4   The Pistol Grip With Stylus

The pistol grip has been designed to easily attach to NEO without tools or screws. For added convenience, the pistol grip is equipped with a stylus inserted in the handle.

- Remove the expansion port cover on the back of NEO. Store the cover in the underside of the pistol grip – you'll see an indent in the shape of the port cover in the pistol plastic.
- Position the pistol grip over the slots moulded into the back of NEO, and snap it into place – no screws required.

Figure 6.7 Attaching The Pistol Grip
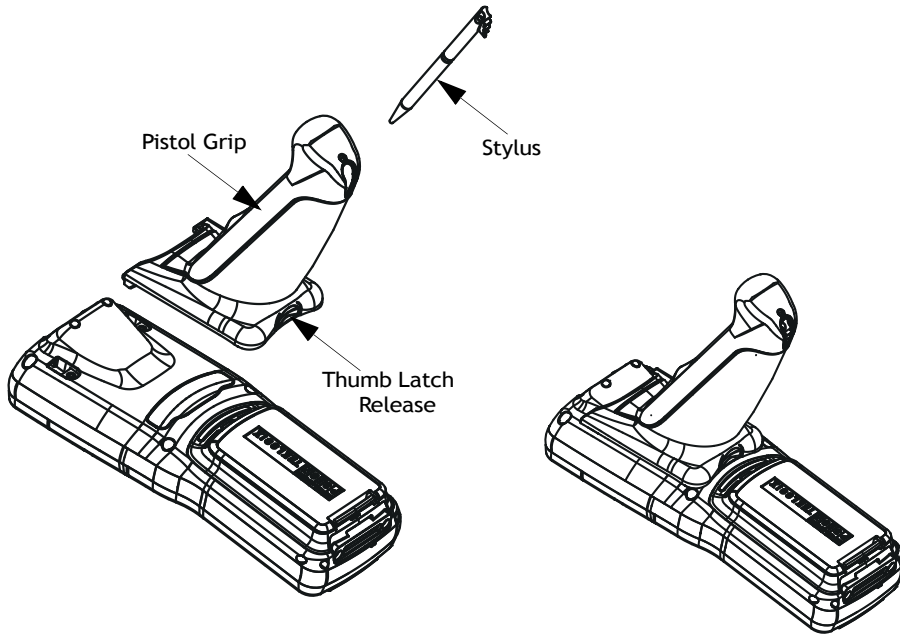
To release the pistol grip:

• Press the thumb latch release, and lift the pistol grip out.

Note: To maintain proper operation, ensure that the expansion port and the pistol grip contacts are dry and free of debris. If necessary, use a soft cloth moistened with alcohol to clean the contacts.

6.2 The Battery

Important: Carefully review the "NEO Hand-Held Computer Regulatory & Warranty Guide", PN 8000175, before handling a battery.

NEO operates on a 3000 mAh Lithium-Ion battery pack – Model WA3020. (The hand-held is also compatible with battery Model No. WA3006.)

Note: Review Chapter 7: "Specifications" for detailed information.

6.3   Adaptor/Cable Options

The following are adaptors that can be ordered for your NEO:

Table 6.2   Adaptor/Cable Model Numbers And Descriptions

Model Number	Adaptor/Cable Description
PX3052	Cable/Dongle – Micro-USB to Ethernet
PX3053	Cable – Micro-USB to USB 'A' Receptacle
PX3058	Cable – Micro-USB to USB 'A'
PX3050	Adaptor – Hand-Held to RS232 Connector
PX3054	Adaptor – Hand-held to Micro-USB with DC Jack
PX3056	Adaptor – Cigarette Lighter

6.3.1   RS232 Adaptor – Model No. PX3050

This adaptor is equipped with an RS232 port via a standard non-powered DB9 connector. Carrying devices such as the wrist strap can still be used when the adaptor is attached to the hand-held.

Slot to accommodate Carrying Strap

RS232 Port
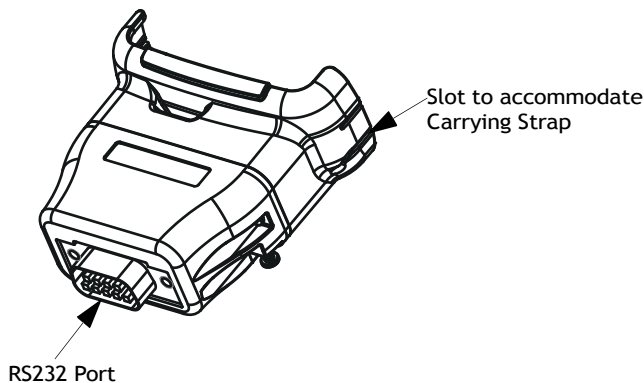
To attach the adaptor to NEO:

- Make certain that the adaptor connector and NEO docking port are free of dust or any other debris before connecting them.

- A slot on the side of the adaptor is provided to accommodate the carrying strap. Thread the carrying strap through the slot on the adaptor. (Refer to Figure 6.8 on page 185.)

Figure 6.8 Threading Wrist Strap Through Adaptor
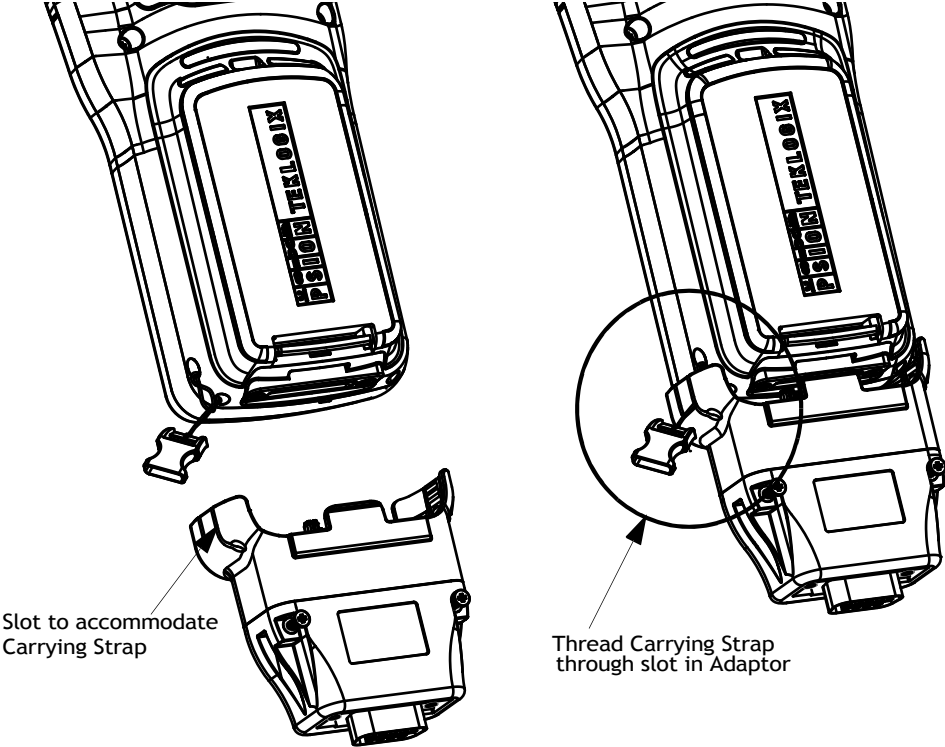
Slot to accommodate
Carrying Strap

Thread Carrying Strap
 through slot in Adaptor

- Align the docking port on the base of NEO with the adaptor, and gently snap the adaptor into place.
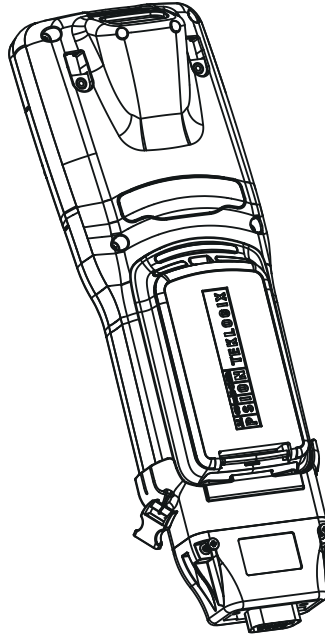
6.3.2   Micro-USB Adaptor – Model No. PX3054

This adaptor is equipped with a micro-USB port along with a DC IN socket. When attached to NEO, the adaptor allows you to connect an AC wall adaptor (Model No. PX3010) or an automotive power adaptor (Model No. PX3056) to the hand-held. The micro-USB port allows you to utilize the micro-USB to Ethernet cable (Model No. PX3052) and the micro-

USB to USB 'A' (Model No. PX3058 & PX3053). Carrying devices such as the wrist strap can still be used when the adaptor is attached to the hand-held.
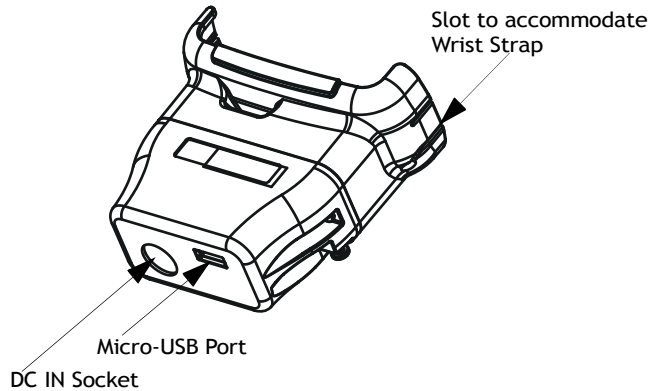
To attach this adaptor:

- Make certain that the adaptor connector and NEO docking port are free of dust or any other debris before connecting them.
- A slot on the side of the adaptor is provided to accommodate the wrist strap. Thread the wrist strap through the slot on the adaptor. (See Figure 6.8 on page 185 for details.)
- Align the docking port on the base of NEO with the adaptor, and gently snap the adaptor into place.

6.4 Charging Options

Psion Teklogix offers a variety of charging options for NEO. These include:

- AC Adaptor – Model No. PX3010 with PX3054
- Cigarette Lighter Adaptor – Model No. PX3056 with PX3054
- Desktop Docking Station – Model No. PX3001
- Quad Docking Station – Model No. PX3004 PC and PX3004 NPC
- Battery Chargers for charging batteries only:
  - Quad Battery Charger – Model No. WA3004
  - Single Battery Charger – Model No. WA3001

6.4.1 Installation – Docking Stations

When installing a docking station, consider the following guidelines.

- Keep docking stations away from excessive dirt, dust and contaminants.
- Docking stations will not charge batteries outside an ambient temperature range of 0 °C to 45 °C (32 °F to 113 °F). It is recommended that the docking station be operated at room temperature—between 18 °C and 25 °C (64 °F to 77 °F) for maximum performance.

After unpacking your unit:

- Visually inspect the docking station for possible damage.
- Install the IEC power cord and apply power.

6.4.2 Power Consumption Considerations

Check to ensure the mains circuit supplying docking stations is adequate for the load, especially if several docking stations are being powered from the same circuit.

- Quad docking station–can consume up to 3A @ 120VAC or 1.5A @ 240VAC.

6.4.3 Operator Controls

NEO docking stations have no operator controls or power switches.

6.5 Desktop Docking Station – PX3001

Figure 6.9 Desktop Docking Station

Note: The desktop docking station is shipped with its own user manual. It is critical that it be reviewed for additional information and updates.

The desktop docking station is designed to charge the battery installed in NEO along with a spare battery pack. It is equipped with a micro-USB port.

Figure 6.10 Back Of Desktop Docking Station

> *Important: This docking station can only be used to charge Psion Teklogix approved lithium-ion batteries.*

6.5.1 Desktop Docking Station Setup

Refer to instruction sheet *PN 1081333* for a checklist of startup steps. You can find this instruction sheet on Teknet. Go to *www.psionteklogix.com*. Tap on **Teknet** and enter you **user name** and **password**. If you're not already a member, you will be asked to register free of charge.

6.5.2 Charging A Battery Installed In NEO

> *Important: Before charging a battery, it is <u>critical</u> that you review the "NEO Hand-Held Computer Regulatory & Warranty Guide, PN 8000175.*

•   Insert the DC power cable to the DC IN port on the desktop docking station. Plug the pronged end of the cable into an AC outlet.

• Slide NEO into the docking station, making certain that the connector on the base of the hand-held is securely seated on the docking station connector pins. An icon is displayed in the task bar at the bottom of the hand-held screen indicating that the unit is properly installed in the station:

The LED on NEO lights up indicating that the unit has external power and battery charging will begin. It is safe to leave the unit in the desktop docking station while it is not in use – the battery will not be overcharged.

Note: To maintain the NEO real time clock for three days, the battery must be charged for a minimum of two hours (while installed in the hand-held).

6.5.3 Charging A Spare Battery

To charge a spare battery:

• Insert the battery in the spare battery charge well at the back of the docking station, aligning the contacts on the battery with the contacts in the spare battery charge well.

*Note: To maintain the NEO real time clock for three days, a battery must be charged for at least two hours while installed in the hand-held; however, if you are charging a **spare** battery (not installed in the hand-held), the real time clock three day backup cannot be maintained until a charged battery is installed in the hand-held computer for at least two hours.*

6.5.4 Battery Charge Duration

A NEO inserted in the desktop docking station requires 3 hours to charge the battery to 75% capacity.

Note: The specified battery charge times are based on NEO default settings – i.e., display brightness 50%, keyboard backlight off, 802.11b/g radio on and 23° C temperature. Additional peripherals and other power consumption features will also alter the specified charge time.

The desktop docking station stops applying power to the battery when it is fully charged– there is no risk of overcharge if the battery remains in the charge well.

6.5.5 Docking Station Charger LED Indicators

The desktop docking station is equipped with a single tri-coloured LED indicator in the lower-right corner of the front panel that indicates various charge states of the spare battery installed in the docking station.

> *Note: During the first two minutes of a battery charge, the LED remains solid yellow while the hand-held computer status is assessed and the super capacitor is charged.*

Table 6.3   Desktop Docking Station Charger LED Behaviour

LED Behaviour	Charge Status
Off	No battery detected in the slot.
Solid Yellow	Battery charged to less than 75% of capacity.
Flashing Green	Battery charged to between 75% and 95% of capacity.
Solid Green	Charge complete.
Flashing Yellow	Battery is not charging. The battery temperature is outside of the charge range of 0º C to 45º C.
Solid Red	Battery is not charging. Battery fault.

> *Note: Battery charging continues whether the hand-held is switched on or off.*

6.5.6   Troubleshooting The Charging Operation Of The Dock

6.5.6.1   Indicator Solid Red

If the indicator is solid red:

- Remove the battery and disconnect the mains power cable.
- Wait at least 20 seconds, and then plug the cable in again.

If the charge well LED remains solid red, the battery may be defective or there is a power supply problem.

6.5.6.2   NEO Power LED Does Not Light Up

- Ensure NEO is fully seated in the dock.
- Verify that there is power from the mains outlet.
- Remove the power cable from the docking station, and check it for damage.
- Reconnect the power cable to the outlet.

6.5.6.3   Indicator Does Not Light When Battery Installed

- Reinstall the battery, and check that it is fully seated in the charge well.

- Remove the battery, and clean the contacts on the battery and the charge well.

- Inspect the charge well contacts for damage (are they bent, flattened, twisted or broken).

- Try inserting a battery that you know to be working in the charge well.

- Reconnect the power cable, and check that the charge well indicator flashes at powerup.

6.5.7 Linking A NEO To A PC

The desktop docking station can be connected to a PC so that you can exchange files or install applications. A USB cable is included with your docking station.

Note: For information about data transfer with the Windows XP operating system and ActiveSync or with the Vista operating system, refer to "Data Transfer Between The PC And The Hand-Held" on page 19.

To link NEO to a PC:

- Insert the hand-held in the desktop docking station.

- Insert the micro-USB connector into the docking station connector. Attach the other end of the cable into a USB port on the PC.

6.5.8 Linking A NEO To An Ethernet Network

A micro-USB Ethernet adaptor cable – model number PX3052 – is used to connect NEO to an Ethernet network through a desktop docking station.

- Insert the micro-USB connector on the adaptor cable into the micro-USB port on back the desktop docking station.

- Connect your network Ethernet cable to the Ethernet port on the adaptor cable.

6.5.8.1 Network Access

The hand-held unit automatically detects insertion into the desktop dock and loads the appropriate drivers to communicate with the micro-USB Ethernet converters.

Network Addressing

The host application uses standard TCP/IP protocol to name, locate and communicate with a specific NEO on the network.

If a link is established between a NEO and a host, the application on the host and on the hand-held must have a recovery mechanism in the event that NEO is removed from the dock, interrupting the link.

6.5.9   Troubleshooting USB Operations

- Ensure that the unit is fully seated in the dock. A dock icon should be visible in the task bar.
- Ensure the USB cabling is connected properly.
- Ensure NEO and docking station contacts are not contaminated.

6.6   AC Wall Adaptor– Model No. PX3010

The AC wall adaptor available for your docking station allows you to operate your hand-held using AC power while charging the battery inserted in the unit.

Adaptor plugs suitable for use in the following regions are shipped with the AC wall adaptor: United Kingdom, Australia, Europe and North America.

Universal AC Power Supply

DC Power Plug

Adaptor Plugs

- Choose the adaptor plug that is suitable for use in your country. Slide the adaptor plug into the Universal AC power supply, snapping it into place. These two pieces, coupled together, are referred to as an AC wall adaptor.
- Insert the DC power plug into the DC IN socket at the back of the charger.
- Plug the pronged end into an AC outlet.

6.7   Cigarette Lighter Adaptor — Model PX3056

The cigarette lighter adaptor allows you to power your hand-held and recharge your battery using power drawn from your vehicle's automotive power outlet when used in conjunction with the DC/USB Adaptor, Model No. PX3054.

Figure 6.11 Automotive Power Adaptor

Automotive Power Adaptor Plug

DC Power Plug
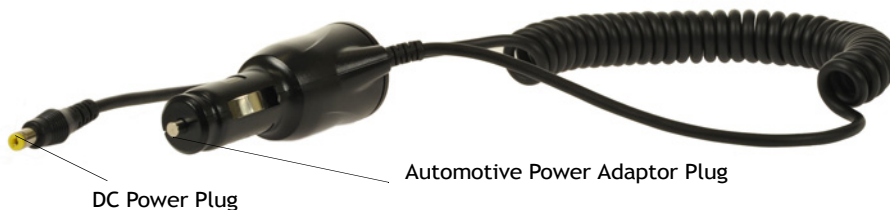
- Attach the micro-USB adaptor, model number PX3054, to the base of NEO. Refer to "Micro-USB Adaptor – Model No. PX3054" on page 186 if you require further details. The desktop docking station is also equipped with a DC IN socket to which you can connect the automotive adaptor.
- Insert the DC power plug on the automotive adaptor into the DC IN socket on the Micro-USB adaptor or desktop docking station.
- Insert the automotive power adaptor plug into automotive power outlet in your vehicle.

Note: Battery charging continues whether the hand-held is switched on or off.

6.8   Quad Docking Station – PX3004 PC & PX3004 NPC

Note: The quad docking station is shipped with a user manual. It is critical that this manual be reviewed for additional information and updates.

The quad docking station permits each of four docked NEOs to communicate with a 10/100 BaseT Ethernet network. It also provides sufficient power to operate the hand-helds and charge their batteries.

⚠️ *Important: **The Ethernet connection on the quad docking station is designed for indoor use only!***

6.8.1 Quad Docking Station Setup

Refer to instruction sheet *PN 1081342* for a checklist of startup steps. You can find this instruction sheet on Teknet. Go to *www.psionteklogix.com*. Tap on **Teknet** and enter you **user name** and **password**. If you're not already a member, you will be asked to register free of charge.

6.8.2 Quad Docking Station Indicators

The quad dock is equipped with a power indicator LED and RJ45 link and traffic indicator LEDs. When a valid link is established, a green LED is illuminated next to the RJ45 connector.

6.8.3 Inserting A NEO In The Quad Docking Station

• Slide NEO into the cradle portion of the quad dock until lightly latched.

The LED on the hand-held unit lights up to show it has external power and may start charging the battery.

Interaction with NEO while in the quad dock is a function of the user application software used to communicate with the host network.

6.8.4 Network Access

The quad docking station has one 10/100 Ethernet port. You can insert up to four hand-held units. The hand-helds are connected to an internal USB hub. The hand-held unit automatically detects insertion into a quad docking station and loads the appropriate drivers to communicate with the USB/Ethernet converters.

6.8.4.1 Network Addressing

Although the USB converters have fixed Ethernet MAC addresses, there is generally no correlation between these addresses and a specific hand-held. The host application uses standard TCP/IP protocol to name, locate and communicate with a specific NEO on the network.

If a link is established between a NEO and a host, the application on the host and on the hand-held must have a recovery mechanism in the event that NEO is removed from the dock and the link is interrupted.

6.8.5 Battery Charging - LED Behaviour

Charge status is displayed on the hand-held LED. Refer to Table 6.3 on page 191 for detailed LED charge behaviour. A NEO inserted in the quad dock requires 3 hours to charge the battery to 75% capacity. Charge durations are independent of the number of NEOs docked.

Note: The specified battery charge times are based on NEO being powered off. Additional peripherals and other power consumption features will also alter the specified charge time.

6.8.6 Troubleshooting

The indicators, applications and drivers required to use and monitor the docking station are installed on NEO – no indicators or applications are present on the docking station itself.

6.8.6.1 Network Link Unsuccessful

If a network link fails, the application must take appropriate action.

6.8.6.2 NEO LED Does Not Light When Docked

- Check that the quad docking station has power: Is the Power LED on the docking station illuminated?
- Try inserting NEO in another well in the quad dock.
- Check for dirt or contamination on the docking contacts at the bottom of NEO. Wipe the contacts with a damp cloth if necessary.
- Check the connector pins inside the dock cradle for dirt. Gently wipe with a soft cloth if they appear to be dirty or discoloured.
- Check that the contacts are not bent or damaged.
- Remove and reinsert NEO in the cradle.
- Make certain that the battery installed in NEO is not defective.

6.9 Scanners And Imagers

NEO supports 1D laser scanner (SE955) and 1D imager (EV15) options to address a variety of user application requirements. The scanner/imager installed in your unit can be config-

ured using the *Scanner Settings* dialog box in the *Control Panel* (see page 134) and the *Manage Triggers* application (see page 97).

⚠️ ***Important: It is critical that you review the "NEO Hand-Held Computer Regulatory & Warranty Guide, PN 8000175, before proceeding.***

6.9.1 Basic Scanner Operations

- Turn the hand-held on. Wait until the unit has booted up completely.
- Aim at the bar code and press the scan key or the trigger. A scan beam and a warning indicator appear until a successful decode is achieved or six seconds have elapsed.

6.9.2 Scanning Techniques

- NEO's unique ergonomic design allows you to hold the hand-held at a comfortable angle while scanning.
- Ensure that the scanner beam is not perpendicular to the bar code. Light reflected directly back into the scanner's exit window may prevent a successful decode.
- Scan the entire bar code. If you are using a 1D laser scanner, make certain that the scan beam crosses every bar and space on the bar code, including the margins on either end of the symbol.
- When using imaging scanners, do not move the scanner while decoding the bar code. Movement blurs the image.
- Hold the scanner farther away for larger bar codes.
- Hold the scanner closer for bar codes with bars that are close together.

A bar code icon appears on the screen during a scan. While the scanner beam is active, the onscreen message states: SCANNING. If you want to turn off the onscreen message, disable **Scan Indication** in the *Options* tab of the *Scanner Settings* menu in the *Control Panel*.

When the scan is successful, the bar code data is displayed on the screen until the scan button (or pistol trigger) is released, but only if **Scan Result** is turned on in the *Options* tab of the *Scanner Settings* menu in the *Control Panel*.

6.9.3 Troubleshooting

If the scanner is not working, investigate the following:

- Check that the bar code symbology being scanned is enabled for the hand-held you are using. Check any other parameters that affect the scanning procedure or the bar code.

- Check the bar code to make sure it is not damaged. Try scanning a different bar code to verify that the problem is not with the bar code.
- Check that the bar code is within the specified decode zone. Refer to "Scanner/Imager Specifications" on page 205 for details.
- Does the hand-held display the warning without scanning? This suggests a hardware problem in the hand-held.
- Is the laser beam scanning across the bar code?
- Once the scan beam has stopped, check the scanner window for dirt, fogging or damage.

6.10   *Bluetooth* **Peripherals**

NEOs equipped with *Bluetooth* radios make it is possible to communicate with a variety of *Bluetooth* peripherals, including GSM/GPRS handsets, scanners, printers, and so on.

The range of the *Bluetooth* radio is limited to approximately 10 meters.

Psion Teklogix provides built-in support for the *Bluetooth* peripherals listed below.

- GSM/GPRS universal handset.
- *Bluetooth* printer.
- *Bluetooth* headset.

Keep in mind that *Bluetooth* and IEEE 802.11b/g radios both operate in the 2.4GHz band. Although NEO includes features to minimize interference, performance of the system will not be optimal if you use both radios simultaneously. Typically, when both radios operate in the hand-held at the same time, they cannot transmit simultaneously—this has a negative impact on overall system throughput. To minimize the impact on the backbone 802.11g network, Psion Teklogix recommends using *Bluetooth* peripherals that have low transaction rates (such as printers and scanners).

Refer to "Bluetooth Setup" on page 102 for information about setting up your *Bluetooth* devices for communication. In addition, review the manual shipped with your *Bluetooth* device to determine the method used to pair with the NEO host.

SPECIFICATIONS 7

7.1 NEO Hand-Held Specifications

Note: Performance specifications are nominal & subject to change without notice.

7.1.1 Hardware

Physical Dimensions

• 168 mm x 64 mm x 34 mm (6.6 in. x 2.5 in. x 1.3 in.)

Weight (with battery pack)

• 275 g (0.6 lbs.)

User Interface

Color Touchscreen Display:	6.86 cm (2.7 in.) diagonal in QVGA portrait mode
	Sunlight readable transmissive with touchscreen
	Colour 240 x 320 graphic TFT
	Passive stylus or finger operation
	LED backlit keyboard
Keyboard:	48-key Alpha Numeric (available for Connected hand-helds with 802.11 radio installed)
	26-key Numeric (available for Connected and Batch – no 802.11 radio installed – units)
	Ergonomically enhanced for ambidextrous, one-hand operation
Indicators & Controls:	Tri-coloured LED indicates battery charge and scan status
Audio:	Built-in microphone and receiver on all Connected hand-helds
	85db internal beeper
	Bluetooth (on equipped models)

Internal Expansion Slot

• One microSD memory card slot – user accessible.

Expansion Port

- Battery Power
- USB signalling

Docking Port

- RS232
- USB
- DC Input

Environmental Specifications

Drop Test:	1.2 m (4 ft.) - 26 drops to polished concrete.
Rain/Dust:	IP54, IEC 529.
Operating Temperature:	-10 °C to +50 °C (14 °F to 122 °F).
Storage Temperature	-20 ºC to +60 ºC (-4 ºF to 140 ºF).
Relative Humidity:	5% to 95% RH non-condensing.
Storage Temperature:	-20 °C to +60 °C (13 °F to 140 °F).
Shock and Vibration:	Random vibration 1 m2/s3 @ 5 to 200 Hz, 0.5 m2/s3 @ 200-500 with duration of 100 min/axis, 3 axes and shock of 150 m/s2 @ 11ms and 300 m/s2 @ 6ms.
ESD:	± 8kVdc air discharge, ± 4kVdc contacts.

7.1.2 Software

Platform

- PXA270 Processor @ 312Mhz
- Memory:
    - On-board RAM: 128 MB SDRAM
    - On-board ROM: 128 MB Flash

Operating System

- Microsoft® Windows® CE 5.0 Professional (connected variant)
- Microsoft® Windows® CE 5.0 Core (batch variant)

Programming Environment

- HTML, XML.
- Mobile Devices SDK:
    - CE .NET SDK
    - Java Visual C++
    - Standard protocols APIs – Windows® sockets   (WinCE)

Application Software

- Internet Explorer 6.0 included with Windows CE 5.0 Professional only
- WordPad included with Windows CE 5.0 Professional only
- ActiveSync
- Open Tekterm
- ANSI
- TESS terminal emulations
- IBM 3270, IBM 5250, HP 2392
- Wavelink®
- MCL
- MCC
- PTX Connect

7.1.3 Wireless Communication

- On-board IEEE 802.11b/g (CCX Certified)
- On-board *Bluetooth* radio

7.1.4 Bar Code Applications

Note: All are user-upgradeable.

- Optional 1D EV15 imager module.
- Optional 1D SE955 laser scanner module.

7.2　NEO Radio Specifications

7.2.1　802.11b/g Radio

Direct Sequence Spread Spectrum (DSSS) and Orthogonal Frequency Division Multiplexing (OFDM)

Form factor	Embedded surface mount module, 8.2 x 8.4 mm
Antenna port	U.FL jack
Antenna Type	PCB slot antenna
Antenna Gain	2dBi peak
Transmit Power	802.11b/g: 50 mW typical (+17 dBm)
Frequency Range	2.400 - 2.4835 GHz
Channels	This radio supports 802.11d. The radio will associate with any 802.11d compliant AP, regardless of what channel is in use.
RX Sensitivity	-86 dBm typ @ 11 Mbps
	-82dBm @ 6 Mbps, -69 dBm @ 54 Mbps
Data Rates	802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	802.11b: 1, 2, 5.5, 11 Mbps
EVM	802.11b: -28 dB typ (16%)
	802.11g: -29 dB typ (13%)
Bluetooth Co-existence	2-line hardware handshake with Bluetooth radio

7.2.2　*Bluetooth* Radio

Form Factor	Embedded (920 kbps serial interface)
Bluetooth Version	Version 2.0 compliant – features Adaptive Frequency Hopping (AFH) for better co-existence with 802.11 radio and Enhanced Data Rate (EDR) for up to 3 Mbps data rate)
Antenna Type	Ceramic chip PIFA
Antenna Gain	1 dBi peak

Transmit Power	-3 dBm (0.5mW) minimum, +4 dBm (2.5 mW) max
Frequency Range	2.400–2.4835 GHz
RX Sensitivity (BER<0.1%)	-80 dBm max
Data Rate	V1.2 = 732.2 kbps and 57.6 kbps asymmetric, 433.9 kbps symmetric
	V2.0 = 2 & 3Mbps
802.11 Co-existence	2-line hardware handshake with 802.11 radio

7.3   Scanner/Imager Specifications

7.3.1   SE 955HP Specifications

Scan Angle	47° ± 3° default / 35° ± 3° reduced
Scan Rate	104 (± 12) scans/sec (bi-directional)
Scan Pattern	Linear
Wavelength	650nm
Input Voltage	3.0-5.5 VDC ± 10%
Input Current	65 mA typical
Standby Current	8 μA max
Operating Temperature	-20° to 60° C -4° to 140°F
Print Contrast	Minimum 25% absolute dark/light reflectance measured at 650 nm
Dimensions	1.21 cm H x 2.16 cm W x 1.55 cm (max) 0.47 in. H x 0.85 in. W x 0.61 in. D (max)
Symbologies	UPC/EAN, Code 128, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Codabar, MSI Plessey

7.3.1.1 SE 955HP Decode Zone

Decode Zone Typical	
4 mil	1.0 in. – 5.5 in. / 2.54 cm – 13.97 cm
5 mil	1.25 in. – 8 in. / 3.18 cm – 20.32 cm
7.5 mil	1.5 in. – 13.25 in. / 3.81 cm – 33.66 cm
10 mil	1.5 in. – 17.5 in. / 3.81 cm – 44.45 cm
UPC 100%	1.5 in. – 23.5 in. / 3.81 cm – 59.69 cm
15 mil	1.5 in. – 29.5 in. / 3.81 cm – 74.93 cm
20 mil	1.75 in. – 35.5 in. / 4.45 cm – 90.17 cm
40 mil	* - 40 in. / * - 101.6 cm
55 mil	* - 55 in. / * - 139.7 cm
* dependent on width of bar code	

7.3.2 EV15 Imager Specifications

Parameter	Specification
Light Source	617nm Highly Visible LED
Scan Angle	40º
Minimum Print Contrast	Minimum 25%
Min x. Dimension	0.1 mm (4 mils)
Reading Distance	Up to 90cm (35 in)
Symbologies	UPC (E&A), EAN, RSS, Code 39, Code 128, UCC/EAN 128, ISBN, ISBT, Interleaved, Matrix, Industrial and Standard 2 of 5, Codabar, Code 93/93i, Code 11, MSI, Plessey, Telepen, PDF417, Micro PDF417
Ambient Light	Works in any lighting conditions, from 0 to 100,000 lux
Shock	2000G, 0.7ms, half sinus, 3 axes
Vibration	50G r.m.s

7.3.2.1 EV15 Imager Decode Zone

0 Lux to 100,000 Lux		
	Minimum Range	Maximum Range
Mil Size	Inches	Inches
5	2.5	7
10	3	14
UPC	2	14.5
20	2.5	22
40	3	35.5
High quality symbols in normal room light.		

APPENDIX A

PINOUTS

A.1 Docking Connector Pinout

PIN #	Signal Name	Function
1	DGND	Ground
2, 3, 4	VDD_EXT_POWER	Power Input (6 VDC, 2.8 A)
5	BATT_OUT	Not Connected
6	AUDIO_N	Not Connected
7	AUDIO_P	Not Connected
8	VBUS_5V	USB Vbus (5 V @ 500 mA)
9	DOCK_ID	Dock Identifier
10	USB_DOCK_D-	USB Data Negative
11	USB_DOCK_D+	USB Data Positive
12	USB_DOCK_ID	USB Identifier
13	DGND	Ground
14	TXD	RS232 Transmit Console Data
15	RXD	RS232 Receive Console Data
16	DGND	Ground

A.2 Battery Connector

PIN #	Signal Name	DESCRIPTION
1	B-	Battery Negative
2	DQ	Bi-directional data (DS2762)
3	TH (GND)	Ground
4	B+	Battery Positive
5	PS	Power Switch Sensor
-	POLARITY TAB	
6	B-	Battery Negative

A.3 Expansion Port Pinout

PIN #	Signal Name	Function
1, 2, 5, 13, 14, 15, 16	DGND	Power Ground
3	USB-	USB Device port negative data
4	USB+	USB Device port positive data
6	EXP-~TRIG	Pistol Grip Trigger signal
7	EXP_~DETECT	Detection of installed device
8, 9, 10, 11, 12	SW_VSYS_PWR	Power Output (2.7-4.2VDC, 1A peak, 500mAh nominal) switched

APPENDIX B

WIRELESS ZERO CONFIG

B.1 Wireless Information

Wireless Zero Config is the native Windows supplicant. To activate *Wireless Zero Config*, refer to "Advanced Tab" on page 22.

• Tap on **Start>Settings>Network and Dial-up Connections.**
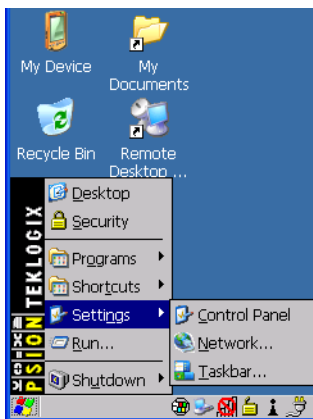
• Choose the **radio icon** representing the radio you want to set up – in the sample screen in Figure B.1, this is labelled as *SDIO86861*

Figure B.1 802.11 Wireless LAN Settings Window

- **Wireless Statistics Tab**: When you choose the **Wireless LAN** icon, an **802.11 Wireless LAN Settings** window is displayed. This tab lists your radio statistics. Choosing the *Zero* button resets the statistics of the last four items – Packets IN, Packets OUT, IN errors and OUT errors.

Figure B.2 Wireless Statistics
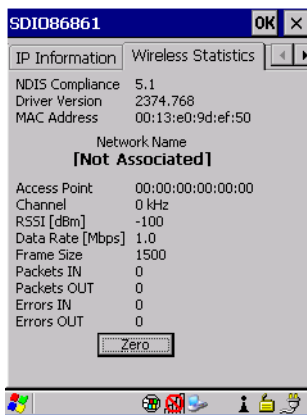
- **Wireless Information Tab:** This tab displays existing networks to which you can connect, and it allows you to add a new network or modify the settings for an existing network.

> *Note:* **Configure** *button – To change the settings in an existing network, highlight the net-*
> *work you want to modify, and tap on the Configure button to display the Wireless*
> *Properties dialog box.*
>
> **Connect** *button – To force connection to a specific, existing network, highlight the*
> *network to which you want your NEO to connect, and tap on the* **Connect** *button*

Figure B.3 Wireless Information Tab
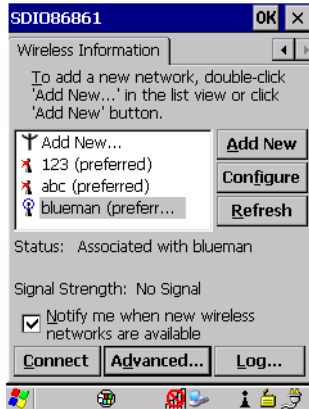
This tab lists available networks – any access points that are broadcasting an SSID, and it lists preferred networks – networks that you have configured. Since access points are generally secure, they will most likely not be listed here. By default, NEO attempts to connect to preferred networks. This behaviour can be changed by enabling *Automatically connect to non-preferred networks* in the *Advanced* dialog box (see Figure B.5).

• To add a new configuration, tap on the **Add New** button. A blank *Wireless Properties* dialog box is displayed.

• **Wireless Properties Tab:** Type the appropriate SSID (Service Set Identifier) in the **Network name (SSID):** dialog box. The *Network name* field can contain a maximum of 32 characters. The name assigned here is listed as a preferred network.
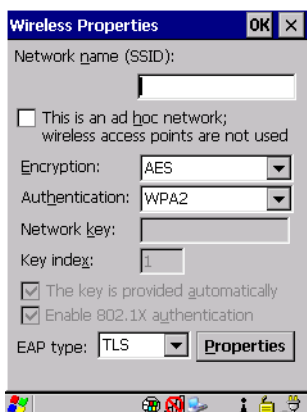
> ⚠ *Important: Keep in mind that NEO will only communicate with access points that are configured with the same SSID.*

- **Ad Hoc And Infrastructure:** If you are using an *Infrastructure* network – one in which NEOs must pass data through an access point – leave the checkbox next to *This is an ad hoc network* blank.

  If you are using an *Ad Hoc* network – a network in which NEOs pass data directly to other Ad Hoc devices without an access point – add a checkmark in the checkbox next to *This is an ad hoc network to enable Ad Hoc*.

- **Encryption**:*WEP* (Wired-Equivalent Privacy) encryption prevents others from accidentally accessing your network. If you are not using encryption, you can choose *Disabled* from the dropdown encryption menu. Otherwise, leave this field as is.

  AES (Advanced Encryption Standard) is a standard for protecting data through encryption. AES supports key sizes of 128 bits, 192 bits and 256 bits and will serve as a replacement for the Data Encryption Standard (DES), which has a key size of 56 bits. In addition to the increased security that comes with larger key sizes, the AES algorithm is a symmetric block cipher that can encrypt (encipher) and decrypt (decipher) information.

- **Authentication:** 802.11 supports four subtypes of network authentication services: *Open, Shared, WPA,* and *WPA-PSK*. Under *Open* authentication, any wireless station can request authentication. The station that needs to authenticate with another wireless station sends an authentication management frame that contains the identity of the sending station. The receiving station then sends back a frame that indicates whether it recognizes the identity of the sending station.

Under *Shared* authentication, each wireless station is assumed to have received a secret shared key over a secure channel that is independent from the 802.11 wireless network communications channel.

Under *WPA* and *WPA-PSK* authentication, the use of 802.1x authentication is required. For wireless networks *without* a Remote Authentication Dial-In User Service (RADIUS) infrastructure, WPA supports the use of a preshared key. For wireless networks *with* a RADIUS infrastructure, Extensible Authentication Protocol (EAP) and RADIUS is supported.

- **Network Key:** This text box is used to specify a 5 or 13 ASCII character sequence or an equivalent 10 or 26 Hexadecimal digit sequence that matches the active WEP key on the access point.

  To assign a *Network key*, highlight **The key is provided automatically**, and *uncheck* the checkbox to disable this option.

Figure B.4 Network Key and Key Index
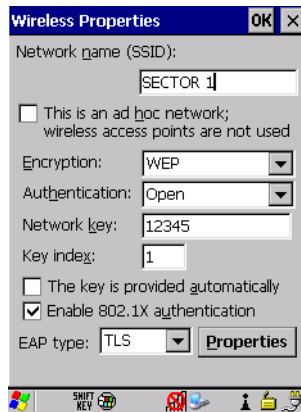
- **Key Index:** This field is used to identify the WEP key.

  Enter a value from **1** to **4**.

- **Enable 802.1x authentication:** *802.1X* is the IEEE standard that offers additional security for local area networks. It provides authentication for user devices attached to an Ethernet network, whether wired or wireless. A security protocol packet such as TLS or MD5 encapsulated in an *EAP* is used in conjunction with the 802.1X standard to authenticate users at the MAC layer. Available EAPs are listed in the dropdown menu next to the *EAP* option.

  To activate 802.1X, highlight **802.1x authentication**, and check the checkbox.

- **EAP Type (Extensible Authentication Protocol):** This dropdown menu lists the EAP types available on your system. The items in this dropdown menu will vary depending on your network setup. Keep in mind also that some authentication protocols require that you select a Certificate. By selecting the *Properties* button, you will be able to select a *Certificate*. "Certificate Assignment" on page 101 provides a website that outlines how to create certificates for your network.

- **Saving and exiting the radio setup:** Once you've completed the configuration, press [ENTER], or tap on OK.

  The connection you created will be listed in the *Wireless Information* tab as a preferred network. The radio will search for the SSID and compare the WEP and authentication information you specified. If there is a match between the hand-held settings and the access point settings, the hand-held will communicate on the network through the access point.

B.2   Assigning An IP Address

If your network is not using a DHCP server, you will need to assign an IP address. Refer to "IP Address" on page 19 for details about assigning an IP address.

B.2.1   Name Server

Refer to "Name Server" on page 21 for details about this option.

B.2.2   Advanced Features

To display the *Advanced Wireless Settings* dialog box:

- Tap on the **Advanced** button in the *Wireless Information* tab. (Refer to Figure B.3.)

This window lists the available preferred networks.

Figure B.5 Advanced Settings
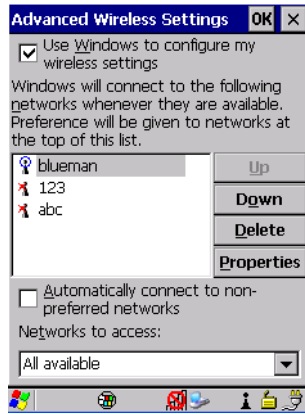
B.2.2.1   Rearranging Preferred Networks

NEO attempts to connect with the networks listed in this dialog box in sequence, beginning at the top of the list. If you need to rearrange this list of networks – move networks up and down in the list:

- Tap in the *Networks List*, and highlight the **network** that you want to move up or down in the list.
- To move the highlighted item in the list upward or downward, tap on the **Down** or **Up** button.

B.2.2.2   Deleting A Preferred Network

To delete a network from this list:

- In the *preferred networks* list, highlight the **network** you want to remove.
- Tap on the **Delete** button.

B.2.2.3   Changing Network Properties

To change the properties of an existing preferred network:

- Highlight the **network** that you want to modify.
- Tap on the **Properties** button.
- Make any necessary changes in the *Wireless Properties* dialog box, and press **[ENTER]** to save the changes.

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